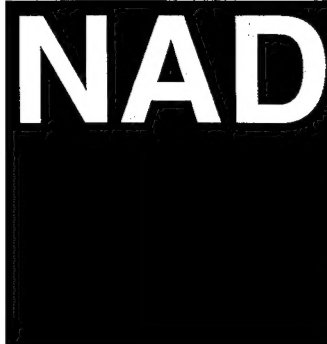


# SERVICE MANUAL



## SERVICE SAFETY PRECAUTIONS (UL)

1. Use exact replacement parts for critical locations marked "⚠"
2. Return lead dress to original position and re-install protective covers.
3. Before returning to customer, test for shock hazard; use either method A or B:
  - A. Leakage test "cold":
    1. Unplug the AC cord; turn power switch ON.
    2. Connect one lead of High Voltage Insulation Tester to both prongs of the AC plug.
    3. Touch other lead to all exposed metal parts.
    4. Impedance measurement must be 0.3-5.0 Megohms.
  - B. Leakage test, "live":
    1. Plug unit directly into the AC outlet: do not use isolation transformer.
    2. Connect one lead of the Leakage Current Tester to earth ground.
    3. Touch other lead to all exposed metal parts.
    4. Leakage measurement must be less than 0.5 milliamps.

**117/917** WITH  
TUNER  
**AV STEREO  
PREAMPLIFIER**

**117**  
**917** WITH  
TUNER

**AV STEREO  
PREAMPLIFIER**

# SAFETY INFORMATION

## 1. Replacing the fuses



This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

<u>Reference No</u>	<u>Part Number</u>	<u>Description</u>
F101-F102*AH	5120-0010-0	Fuse 250V 800mA Time Lag UL/CSA.
F104*AH	N51005010-1A	Fuse 250V 500mA Slow Blow UL/CSA.
F101-F102*B,C	5120-0011-0	Fuse 250V 800mA Time Lag LBC VDE/SEMKO.
F104*B,C	N51005010-1B	Fuse 250V 500mA Slow Blow LBC VDE/SEMKO.

### NOTE :

- <\*AH > : USA, CANADIAN MODEL ONLY.
- <\*B > : UK MODEL ONLY.
- <\*C > : EUROPEAN MODEL ONLY.

## 2. Safety-check out

(Only U.S.A. model)

After correcting the original service problem perform the following safety check before releasing the set to the customer.

Connect the insulating-resistance tester between the plug of power supply cord and the screw on the back panel.

Specifications : 3.3 Mohm $\pm$ 10% at 500V.

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# SPECIFICATIONS

## TUNER SPECIFICATION (For 917 Only)

**Note:** For FM tuner, the input voltage is expressed as the reading in open-circuit voltage of 75-ohm source impedance. The unit of the input voltage is in dB $\mu$ , which is expressed as a relative magnitude in dB, using 1 $\mu$ V as the reference voltage.

There are two types of tuner front-end modules used in the FM tuner circuit, the AH version uses A16, while the others use G55 or G58 (G58 is a revised G55). Hence, the specification between the two types are different. For the AM tuner, although there are two types of channel spacings between countries, the specification is in general the same.

## FM BAND SPECIFICATION

Frequency Range

87.5  $\pm$ 0.02 MHz TO 108  $\pm$ 0.02 MHz

		FREQ	UNIT	LIMIT	
				AH	C,B,B1
Input sensitivity (1kHz, 3% THD)	MONO	98MHz	dB $\mu$	$\leq 8$	$\leq 20$
50dB quieting	MONO	98MHz	dB $\mu$	$\leq 16$	$\leq 24$
	STEREO	98MHz	dB $\mu$	$\leq 34$	$\leq 38$
60dB quieting	MONO	98MHz	dB $\mu$	$\leq 24$	$\leq 34$
	STEREO	98MHz	dB $\mu$	$\leq 42$	$\leq 48$
S/N RATIO (60dB $\mu$ IHF wtd)	MONO	98MHz	dB	$\geq 76$	$\geq 76$
	STEREO	98MHz	dB	$\geq 70$	$\geq 65$
THD (60dB $\mu$ )	MONO	98MHz	%	$\leq 0.25$	$\leq 0.25$
	L + R STEREO	98MHz	%	$\leq 0.25$	$\leq 0.25$
	L - R STEREO	98MHz	%	$\leq 0.15$	$\leq 0.20$
IF Rejection	(10.7MHz)	98MHz	dB	$\geq 65$	$\geq 75$
Image Rejection	(119.4 MHz)	98MHz	dB	$\geq 58$	$\geq 65$
Capture ratio	(40dB $\mu$ )	98MHz	dB	$\leq 2$	$\leq 1$
AM Supression	(60dB $\mu$ )	98MHz	dB	$\geq 50$	$\geq 50$
Pilot suppression,	(60dB $\mu$ )	98MHz	dB	$\geq 55$	$\geq 55$
Frequency response (1kHz Ref, 75usec) (1kHz Ref, 50usec)		30Hz to 15kHz	dB	$0 \pm 1$	
		30Hz to 15kHz	dB		$0 \pm 1$
Channel Separation (60dB $\mu$ )		30Hz	dB	$\geq 30$	$\geq 30$
		1kHz	dB	$\geq 35$	$\geq 32$
		10kHz	dB	$\geq 30$	$\geq 27$
Alternate channel selectivity, (40dB $\mu$ )		+400kHz	dB	$\geq 55$	$\geq 65$
		-400kHz	dB	$\geq 55$	$\geq 65$
Auto-search sensitivity			dB $\mu$	$18 \pm 7$	$18 \pm 7$
Center tune sensitivity			dB $\mu$	$14 \pm 7$	$14 \pm 7$
Stereo indicator threshold		OFF	dB $\mu$	$18 \pm 7$	$18 \pm 7$
		ON	dB $\mu$	$21 \pm 7$	$21 \pm 7$
Bar graph No.8 sensitivity		dB $\mu$	$44 \pm 10$	$44 \pm 10$	



## AM BAND SPECIFICATION, ALL VERSIONS

Frequency Range, AH version 520 kHz  $\pm$  2 kHz to 1610 kHz  $\pm$  2 kHz, step 10 kHz  
 C,B & B1 522 kHz  $\pm$  2 kHz to 1611 kHz  $\pm$  2 kHz, step 9 kHz

	FREQ	UNIT	LIMIT
Input Sensitivity (10% THD)	1000kHz/999kHz	dB $\mu$	$\leq 24$
S/N @ 2mV(66dB $\mu$ )	1000kHz/999kHz	dB	$\geq 45$
Distortion (30% mod @ 1kHz, 66 dB $\mu$ )	1000kHz/999kHz	%	$\leq 3$
Image Rejection (LO) +2*IF	1900kHz/1899kHz	dB	$\geq 30$
IF Rejection	450kHz	dB	$\geq 35$
Selectivity $\pm$ 10kHz $\pm$ 9kHz (avg 2)		dB	$\geq 20$
Autosearching Sensitivity	1000kHz/999kHz	dB $\mu$	31 $\pm$ 7
Bar Graph no.8 Sensitivity	1000kHz/999kHz	dB $\mu$	39 $\pm$ 7

## A / V SURROUND TESTING (117/917)

### A. A/V STEREO.

PARAMETER	SPEC	INPUT MODE	INPUT LEVEL	FREQ	OUTPUT	OUTPUT LEVEL	PROCEDURE
THD	$\leq 0.03\%$	L=R	2 V	1 kHz	L, R	2 V	Measure THD.
120 Hz	$\leq 0.03\%$ $\leq 0.04\%$	L=R	500 mV 1.5 V	20 Hz	Sub	500 mV 1.5 V	Adjust subwoofer volume and measure THD.
S/N-AWTD	$\geq 90$ dB	L, R	500 mV	1 kHz	L, R	500 mV	Remove input signal and connect 1K termination. Measure noise level.
Unweighted	77 dB	L=R		20 Hz	Sub		Adjust subwoofer volume. Remove input signal and connect 1K termination. Measure noise level.
Sensitivity	180 mV $\pm$ 20 mV	L, R	–	1 kHz	L, R	1 V	Measure input level at maximum volume setting.
	40 $\pm$ 5 mV	L=R	–	20 Hz	Sub	1 V	Measure input level at maximum volume setting.
Maximum input level	$\geq 5$ V	L, R	–	1 kHz	L, R	–	Volume set at unity gain. Increase input level until THD=0.1%. Measure input level.
Maximum Output level	Front $\geq 5$ V	L=R	500 mV	1 kHz	L, R	–	Adjust volume until THD=0.1%. Measure output level.
	Headphone $\geq 5$	L=R	500 mV	1 kHz	H/P		Adjust volume until THD=0.1% with 600 ohms load. Measure output level.

PARAMETER	SPEC	INPUT MODE	INPUT LEVEL	FREQ	OUTPUT	OUTPUT LEVEL	PROCEDURE
Channel separation	$\geq 70$ dB $\geq 48$ dB	L, R	2 V	1 kHz 10 kHz	L, R	2 V	Measure output level at unselected output channel.
Crosstalk	$\geq 70$ dB $\geq 48$ dB	L=R	2 V	1 kHz 10 kHz	L, R	2 V	Measure output level at unselected source input.
	$\geq 40$ dB	L=R	2 V	1 kHz	L, R	2 V	Measure output level at tape record with input signal at its tape input.
Gain tracking	at 0 dB $\leq 1$ -30 dB $\leq 3$ -60 dB $\leq 3$	L=R	—	1 kHz	L, R	2 V	From maximum, reduce volume by 60 dB and measure by difference in level between L and R.
Freq response	on 0 dB $\pm 0.5$ off 0 dB $\pm 0.7$	L=R	500 mV	20 Hz- 20 kHz	L, R	500 mV	Measure rise and drop in output level with tone defeat on and off.
	Sub				Adjust subwoofer volume. Measure rise and drop of output level with 20 Hz reference.		
				Flat 0 dB $\pm 1$			60 Hz
				60 Hz -3 dB $\pm 1$ 120 Hz			120 Hz
	Bass eq.			+3 dB $\pm 1$	L=R		500 mV
Bass Treble	10 dB $\pm 1.5$ 7 dB $\pm 1.5$	L=R	500 mV	50 Hz 10 kHz	L, R	500 mV	Measure rise and drop of output level after adjusting controls to maximum and minimum.

#### B. PRO-LOGIC (117/917)

PARAMETER	SPEC	INPUT MODE	INPUT LEVEL	FREQ	OUTPUT	OUTPUT LEVEL	PROCEDURE
CDR	5dB $\pm 1$ dB 12dB $\pm 1$ dB 0dB $\pm 1$ dB	L=R	177 mV 60 mV 345 mV	1 kHz	L, R	500 mV	Measure rise in output after switching CDR on and at Maximum volume setting.
Sibilance	-3dB $\pm 1$ dB	L=R	500 mV	7 kHz	L, R	500 mV	Measure drop in output after switching sib. on.
Channel separation	45 dB 30 dB 35 dB	L, R	500 mV	1 kHz	R, L C SL, SR	500 mV	Measure output at unselected output channel.
	30 dB	L=R	345 mV	1 kHz	L, R C		Measure output at unselected output channel.
	20 dB 30 dB	L=R	345 mV	1 kHz	L, R SL, SR		Measure output at unselected output channel.

PARAMETER	SPEC	INPUT MODE	INPUT LEVEL	FREQ	OUTPUT	OUTPUT LEVEL	PROCEDURE	
Freq response	0 dB ±0.8	L, R	500 mV	20 Hz-20 kHz	L, R	500 mV	Measure rise and drop of output level with 1 kHz reference.	
	0 dB ±0.5	L=R	345 mV	300 Hz-20 kHz	C		Adjust center volume. Measure rise and drop of output level with 1 kHz reference.	
	70 Hz-120 Hz						Get frequency when level drops by 3 dB with 1 kHz reference.	
	-3dB point	-1 dB ±1		L=-R	30 Hz		SL, SR	Adjust surround volume. Measure drop in level at 30 Hz.
	-3dB point	7 kHz ±1						Get frequency when level drops by 3 dB with 1 kHz reference.
THD	≤ 0.15% ≤ 0.4%	L, R	500 mV 1.5 V	1 kHz	L, R	500 mV 1.5 V	Measure THD.	
Normal	≤ 0.1% ≤ 0.4%	L=R	345 mV 1.5 V		C		Adjust center volume and measure THD.	
	≤ 0.5% ≤ 1.0%	L=-R			SL, SR		Adjust surround volume and measure THD.	
S/N- AWTD	≤ 80 dB	L, R	500 mV	1 kHz	L, R	500 mV	Remove input signal and connect 1K termination. Measure noise level.	
Normal	≤ 75 dB	L=R	345 mV		C		Adjust center volume. Remove input signal and connect 1K termination. Measure noise level.	
	≤ 70 dB	L=-R			SL, SR		Adjust surround volume. Remove input signal and connect 1K termination. Measure noise level.	
Sensitivity	90 ±10 mV	L, R	—	1 kHz	L, R	500 mV	Measure input level at maximum volume setting and +6 trim level.	
Phantom	90 ±10 mV	L=R			L, R			
	7.5 ±1.5mV				C			
4 channel	13 ±2 mV	L=-R			SL, SR			
3 channel	130 ±10mV				L, R			

### C. SOUND SPACE

INPUT			OUTPUT (mV)											
			STADIUM				HALL				CLUB			
MODE	LEVEL	FREQ.	L	R	C	S	L	R	C	S	L	R	C	S
L	125 mV	1 kHz	1000 0.2%	< 200	< 20	2600 ±10%	700 0.2%	< 20	< 20	< 20	1050 0.2%	< 200	< 20	< 20
R	125 mV	1 kHz	< 200	1000 0.2%	< 20	1600 ±10%	< 20	700 0.2%	< 20	< 20	< 200	1050 0.2%	< 20	< 20
L = R	125 mV	1 kHz	800 0.2%	8000. 0.2%	880 0.2%	4500 ±10%	< 100	< 100	880 0.2%	< 20	1130 0.2%	1130 0.2%	880 0.2%	< 20
L = -R	125 mV	1 kHz	1150 0.2%	1150 0.2%	< 20	2500 ±1000	< 20	< 20	< 20	270 0.4%	950 0.2%	950 0.2%	< 20	650 0.4%

### PROCEDURE:

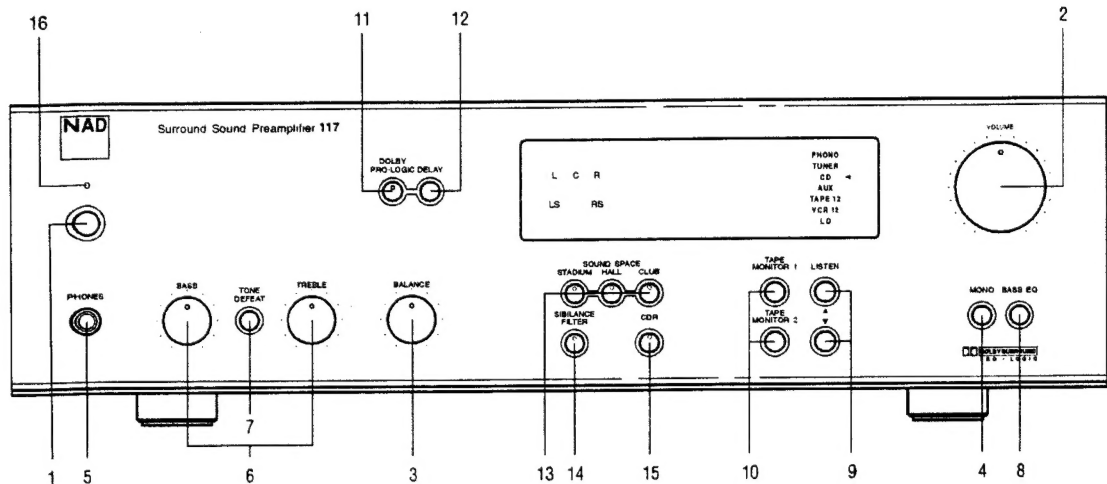
1. Set center switch to Normal and Surround Mode switch to 4 channel.
2. Set Delay to 15 msec.
3. Set master volume to maximum while center volume and surround volume are at "0" setting.
4. Measure output level and THD on each channel. There is no need to measure THD for levels below 200 mV.
5. Tolerance for output levels is ±20% unless otherwise specified.
6. For stadium surround outputs with L, R and L=R inputs, the input signal is 100 mV 40 Hz and the surround volume is set at "+6".
7. For stadium surround output with L=-R input, the input signal is 100 mV of pink noise (off-tuned tuner output) and the surround volume is set at "+6".

### D. DIMENSIONS

Net Weight : 6.7 kg, 14.74 lb  
 Shipping Weight : 8.3 kg, 18.26 lb  
 Dimensions : 435 x 115 x 350 mm

# 117 REAR PANEL / FRONT PANEL VIEW

## FRONT PANEL



- |                           |                        |                      |
|---------------------------|------------------------|----------------------|
| 1. POWER                  | 7. TONE DEFEAT         | 13. SOUND SPACE      |
| 2. VOLUME                 | 8. BASS EQ             | 14. SIBILANCE FILTER |
| 3. BALANCE                | 9. LISTEN              | 15. CDR              |
| 4. MONO                   | 10. TAPE MONITOR 1 & 2 | 16. POWER LED        |
| 5. HEADPHONE SOCKET       | 11. DOLBY PRO LOGIC    |                      |
| 6. BASS & TREBLE CONTROLS | 12. DELAY              |                      |

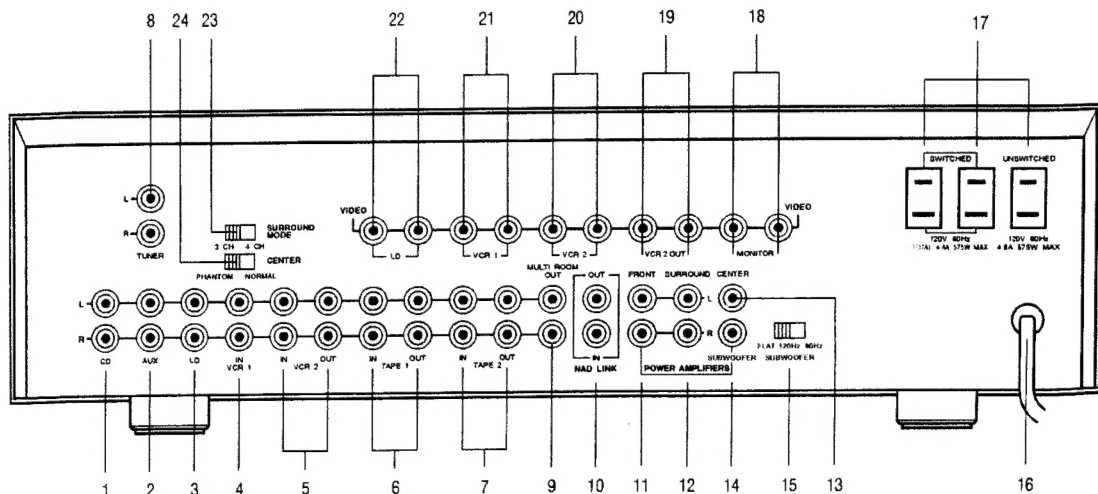


The lightning flash with arrowhead, within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

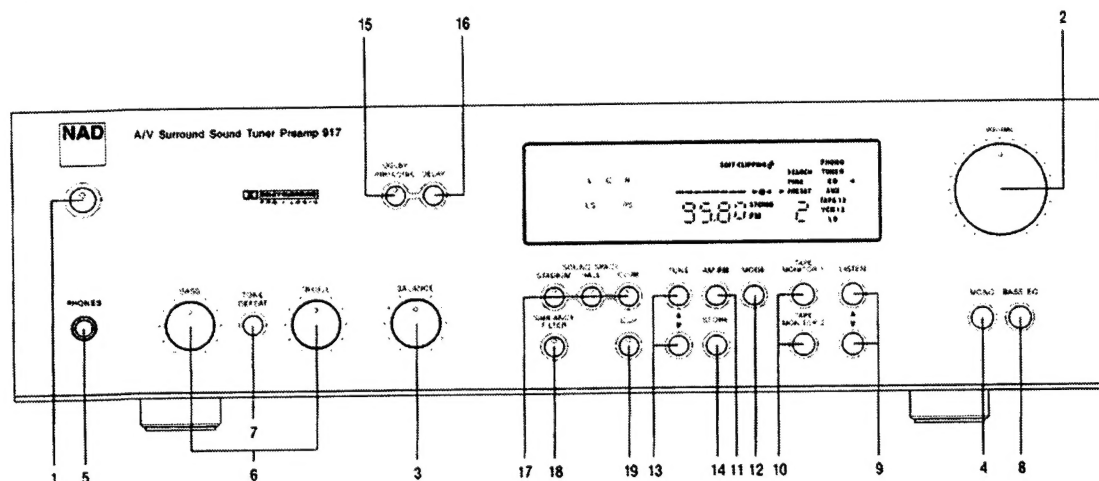
## REAR PANEL CONNECTIONS



- |              |                                  |                                     |
|--------------|----------------------------------|-------------------------------------|
| 1. CD INPUT  | 8. TUNER INPUT                   | 18. MONITOR VIDEO OUTPUT            |
| 2. AUX INPUT | 9. MULTI ROOM OUT                | 19. VCR2 VIDEO OUTPUT               |
| 3. LD INPUT  | 10. NAD LINK IN OUT              | 20-22. VIDEO INPUTS                 |
| 4. VCR 1     | 11-14. POWER AMPLIFIERS          | 23. DOLBY 3CH/4CH SURROUND SELECTOR |
| 5. VCR 2     | 15. SUBWOOFER SELECTOR           | 24. CENTER PHANTOM/ NORMAL SELECTOR |
| 6. TAPE 1    | 16. AC POWER CORD                |                                     |
| 7. TAPE 2    | 17. AC OUTLETS (US version only) |                                     |

# 917 REAR PANEL / FRONT PANEL VIEW

## FRONT PANEL



- |                           |                        |                      |
|---------------------------|------------------------|----------------------|
| 1. POWER                  | 8. BASS EQ             | 15. DOLBY PRO LOGIC  |
| 2. VOLUME                 | 9. LISTEN              | 16. DELAY            |
| 3. BALANCE                | 10. TAPE MONITOR 1 & 2 | 17. SOUND SPACE      |
| 4. MONO                   | 11. AM/FM SELECTOR     | 18. SIBILANCE FILTER |
| 5. HEADPHONE SOCKET       | 12. TUNING MODE        | 19. CDR              |
| 6. BASS & TREBLE CONTROLS | 13. TUNE MODE          |                      |
| 7. TONE DEFEAT            | 14. STORE MODE         |                      |

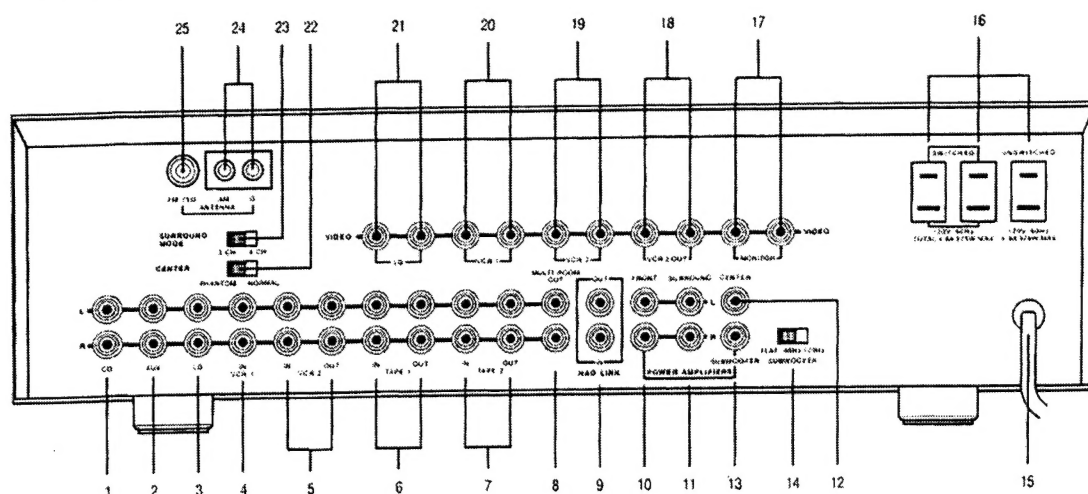


The lightning flash with arrowhead, within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.



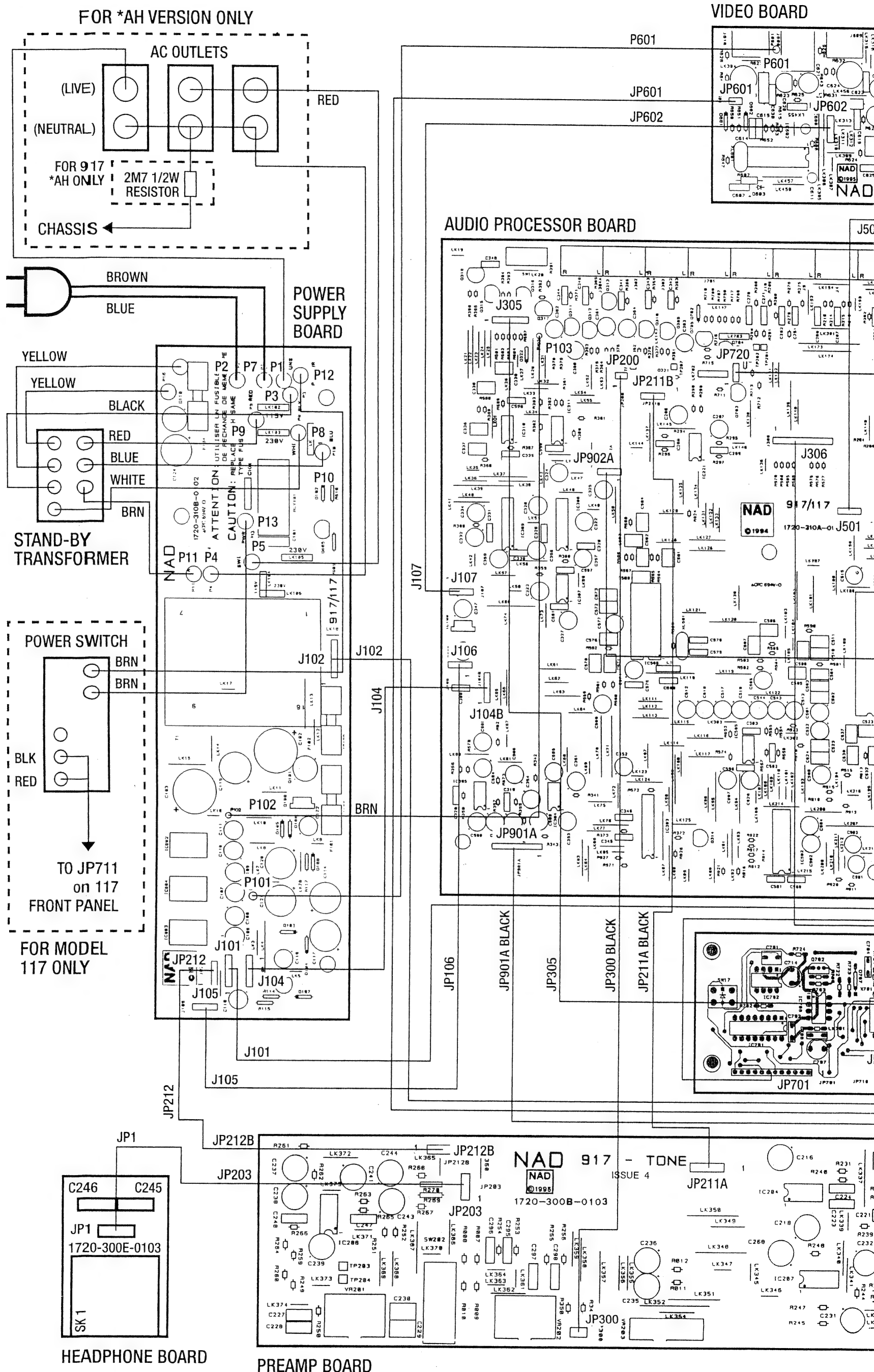
The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## REAR PANEL CONNECTIONS



- |                   |                                  |                           |
|-------------------|----------------------------------|---------------------------|
| 1. CD INPUT       | 9. NAD LINK IN OUT               | 19-21. VIDEO INPUTS       |
| 2. AUX INPUT      | 10-13. OUTPUTS TO POWER          | 22. CENTER PHANTOM/NORMAL |
| 3. LD INPUT       | AMPLIFIERS                       | SELECTOR                  |
| 4. VCR 1          | 14. SUBWOOFER SELECTOR           | 23. SURROUND MODE 3CH/4CH |
| 5. VCR 2          | 15. AC POWER CORD                | SELECTOR                  |
| 6. TAPE 1         | 16. AC OUTLETS (US version only) | 24. AM ANTENNA            |
| 7. TAPE 2         | 17. MONITOR VIDEO OUTPUT         | 25. FM ANTENNA            |
| 8. MULTI ROOM OUT | 18. VCR 2 VIDEO OUTPUT           |                           |

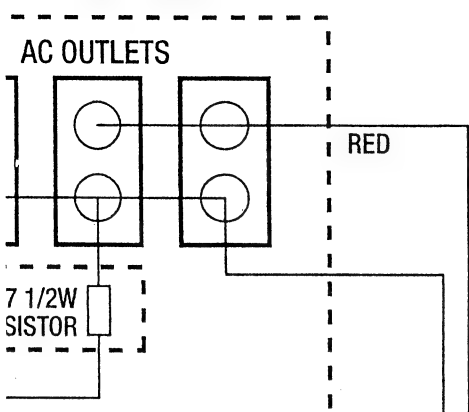
# WIRING DIAGRAM



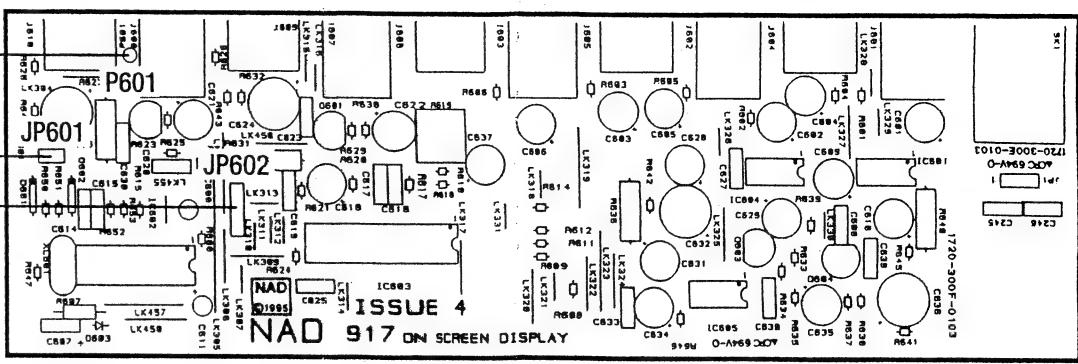


# RAM

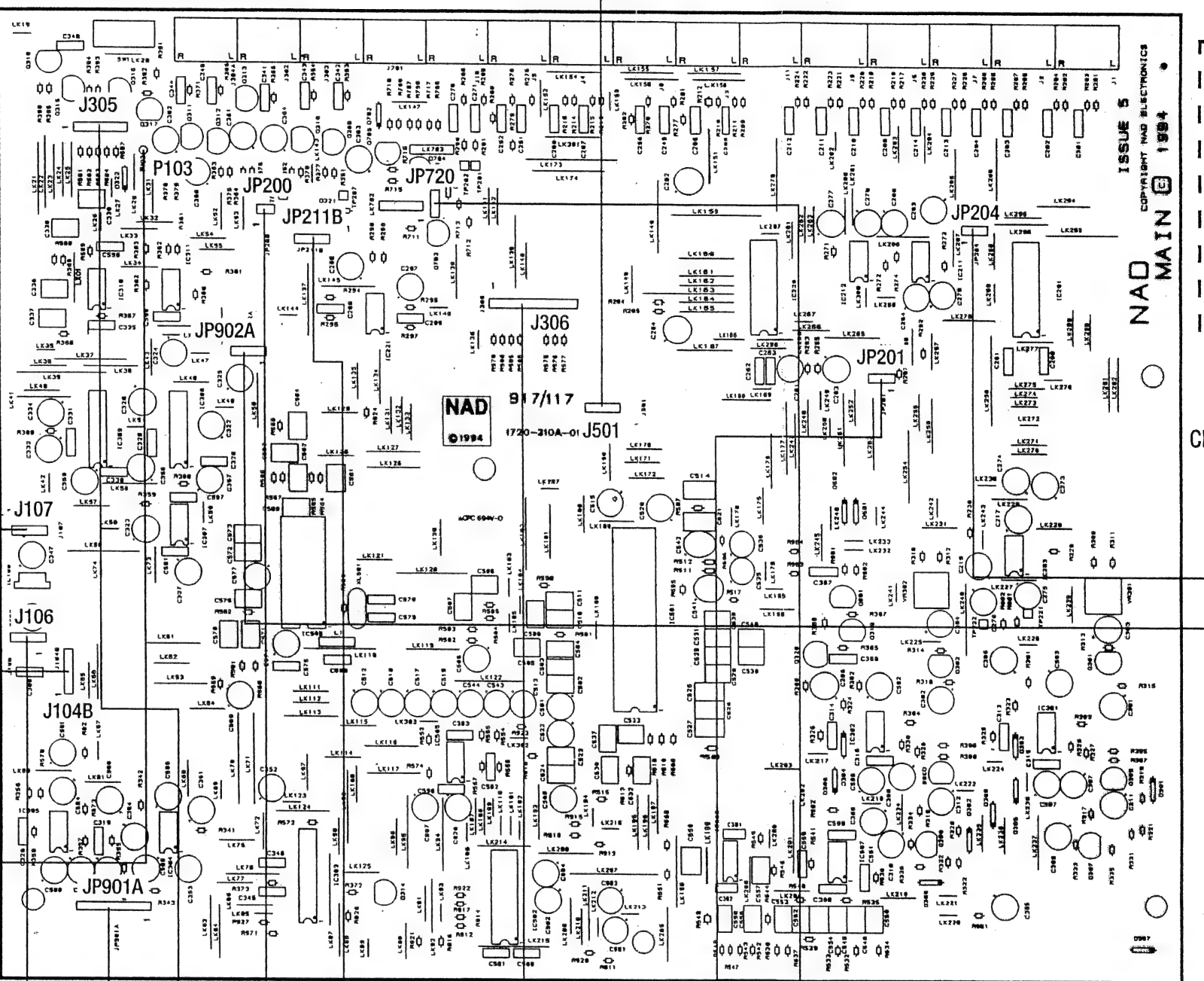
**VERSION ONLY**



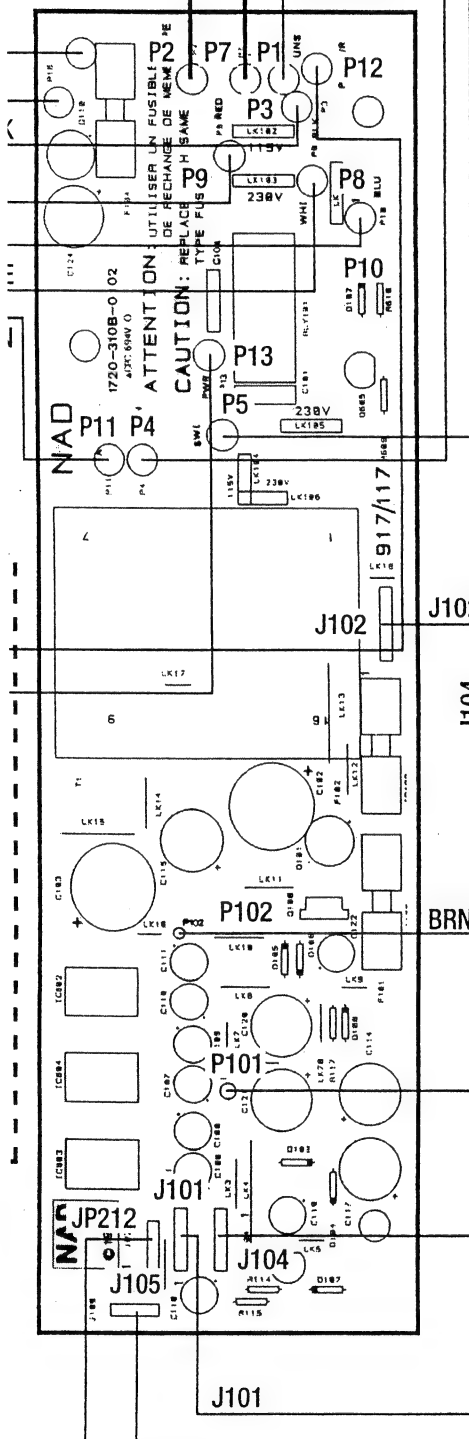
## VIDEO BOARD



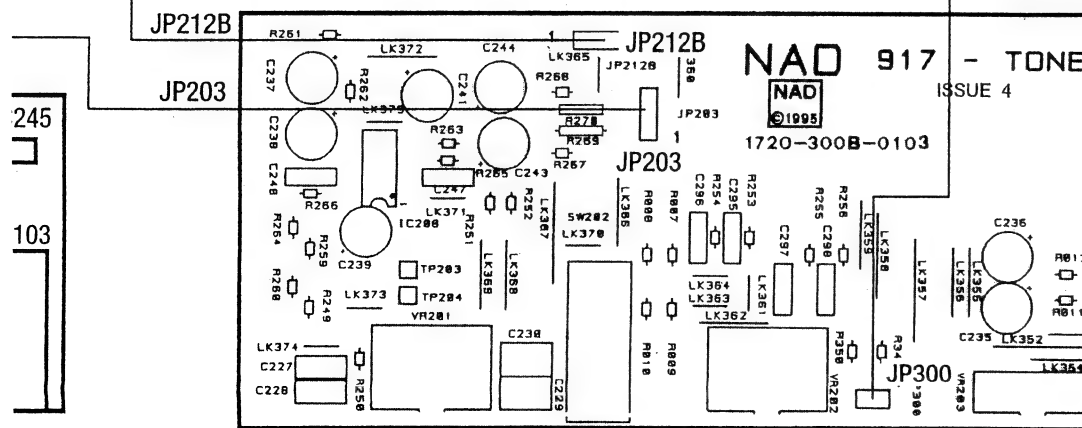
## AUDIO PROCESSOR BOARD



## POWER SUPPLY BOARD



NAD 917 - TONE  
NAD ISSUE 4

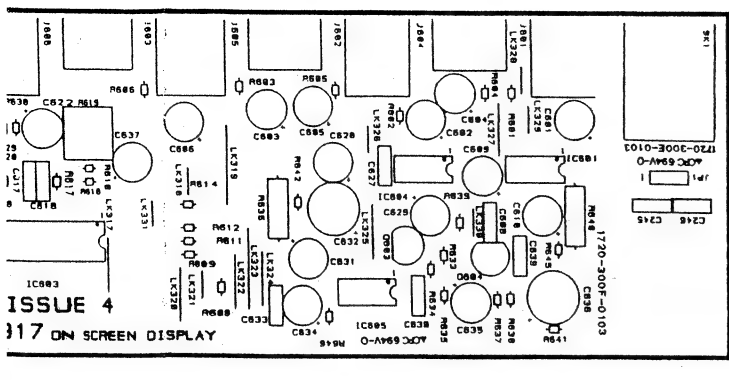


## IE BOARD

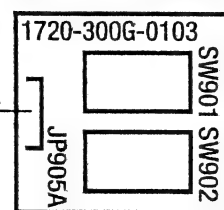
## PREAMP BOARD

**\*\* NOTE: WIRE**



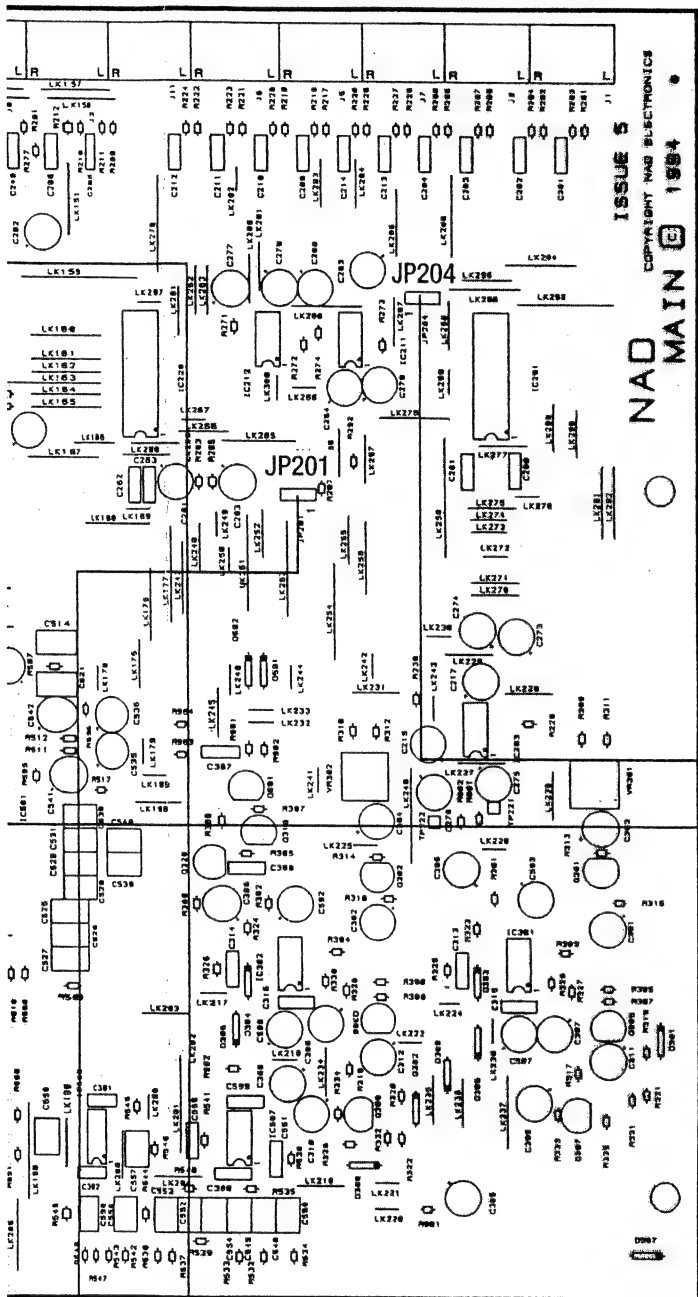


# SURROUND/CENTER SWITCH BOARD



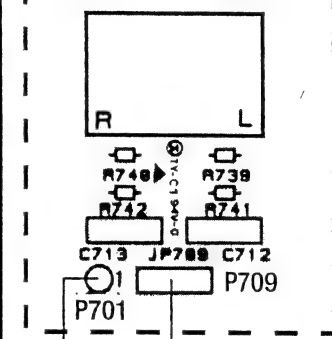
JP905A

FOR 917 ONLY



FOR 117 ONLY

## TUNER I/P BOARD



TO CHASSIS

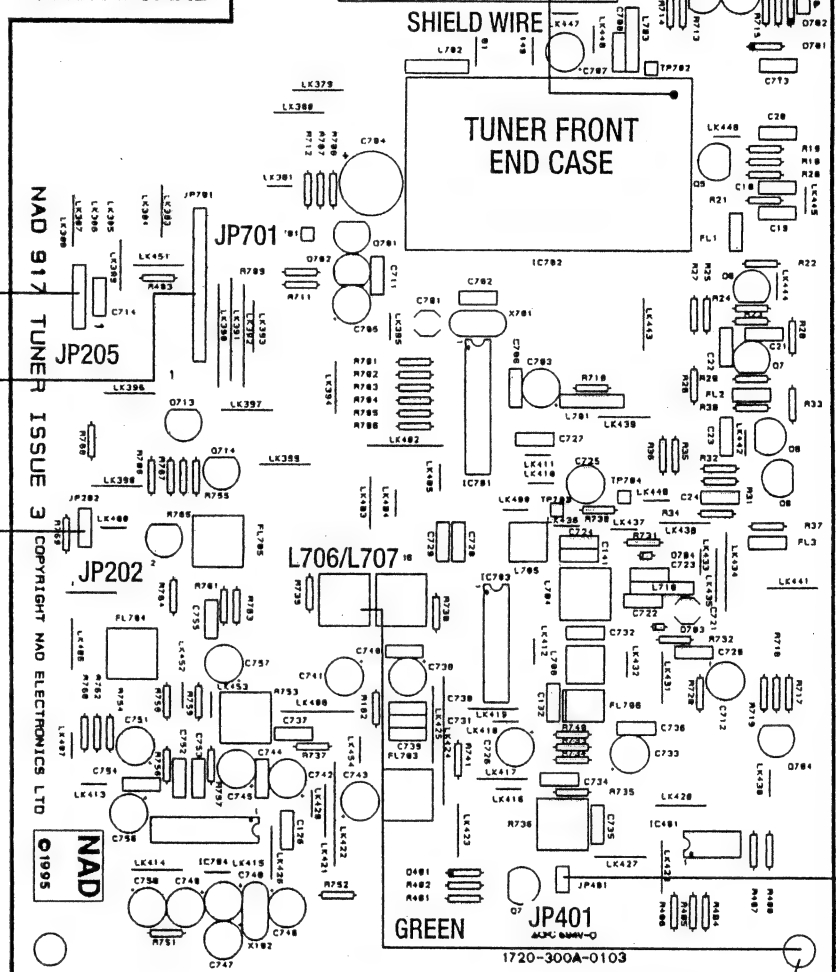
JP709 BLACK

JP205

JP701

JP202  
BLACK

## TUNER BOARD

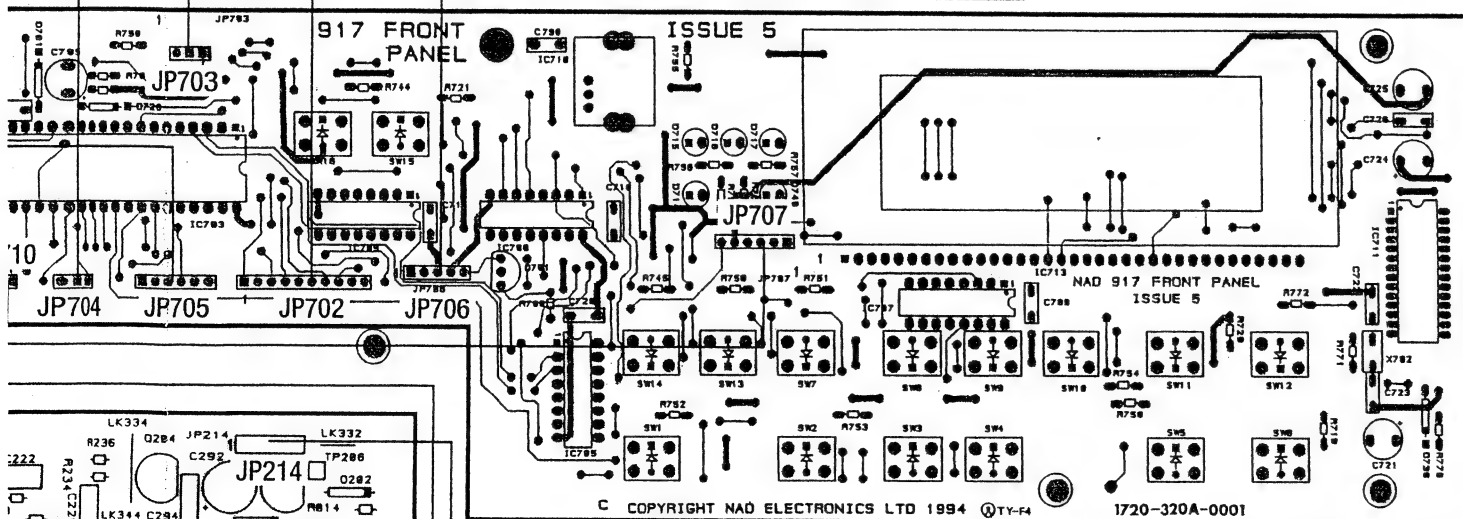


FM ANTENNA  
TERMINAL GROUND

SHIELD WIRE

TUNER FRONT  
END CASE

MOUNTING HOLE



JP214 BLACK

## FRONT PANEL BOARD

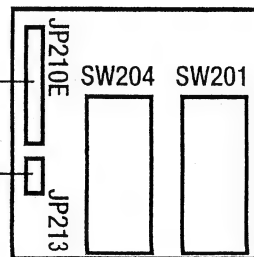
J904A

J902A

J903A  
BLACK

## VOLUME BOARD

J901A BLACK



## PUSH-SWITCH BOARD

JP213

\*\* NOTE: WIRES, UNLESS SPECIFIED ARE WHITE COLOUR.

# DISASSEMBLY INSTRUCTIONS

1. Remove machine screws M4.0 x 6.0 (① to ⑥) from the side panels.  
Remove tapping screw 3.0 x 8.0 (⑦ and ⑧) from the back panel.  
Refer to **Figure No. 1**.

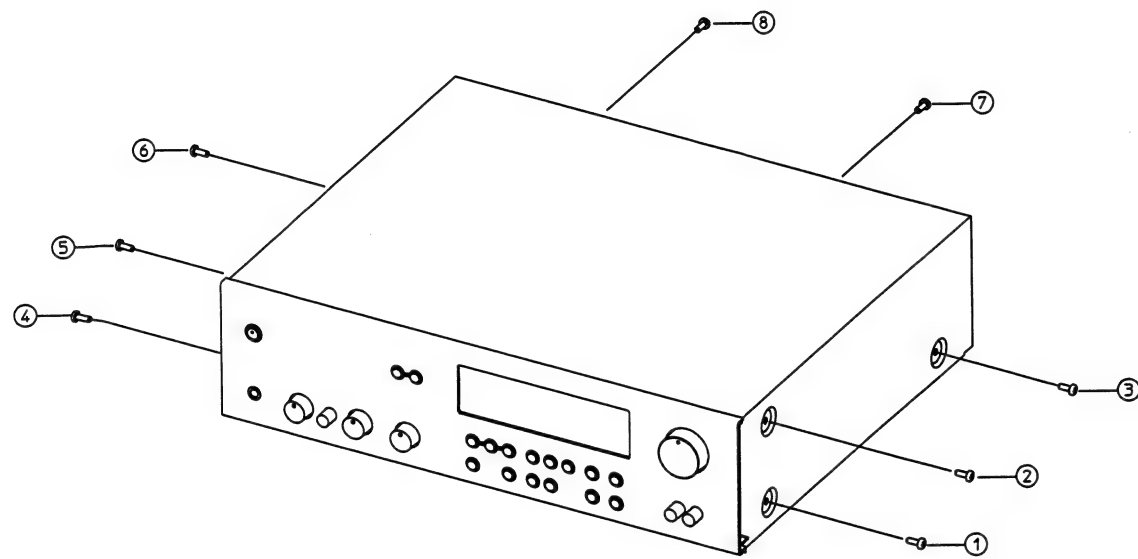


Figure No. 1.

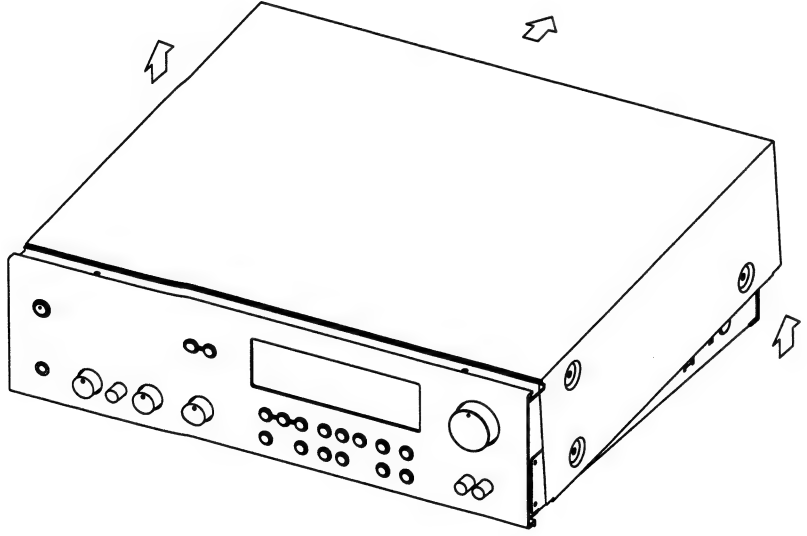
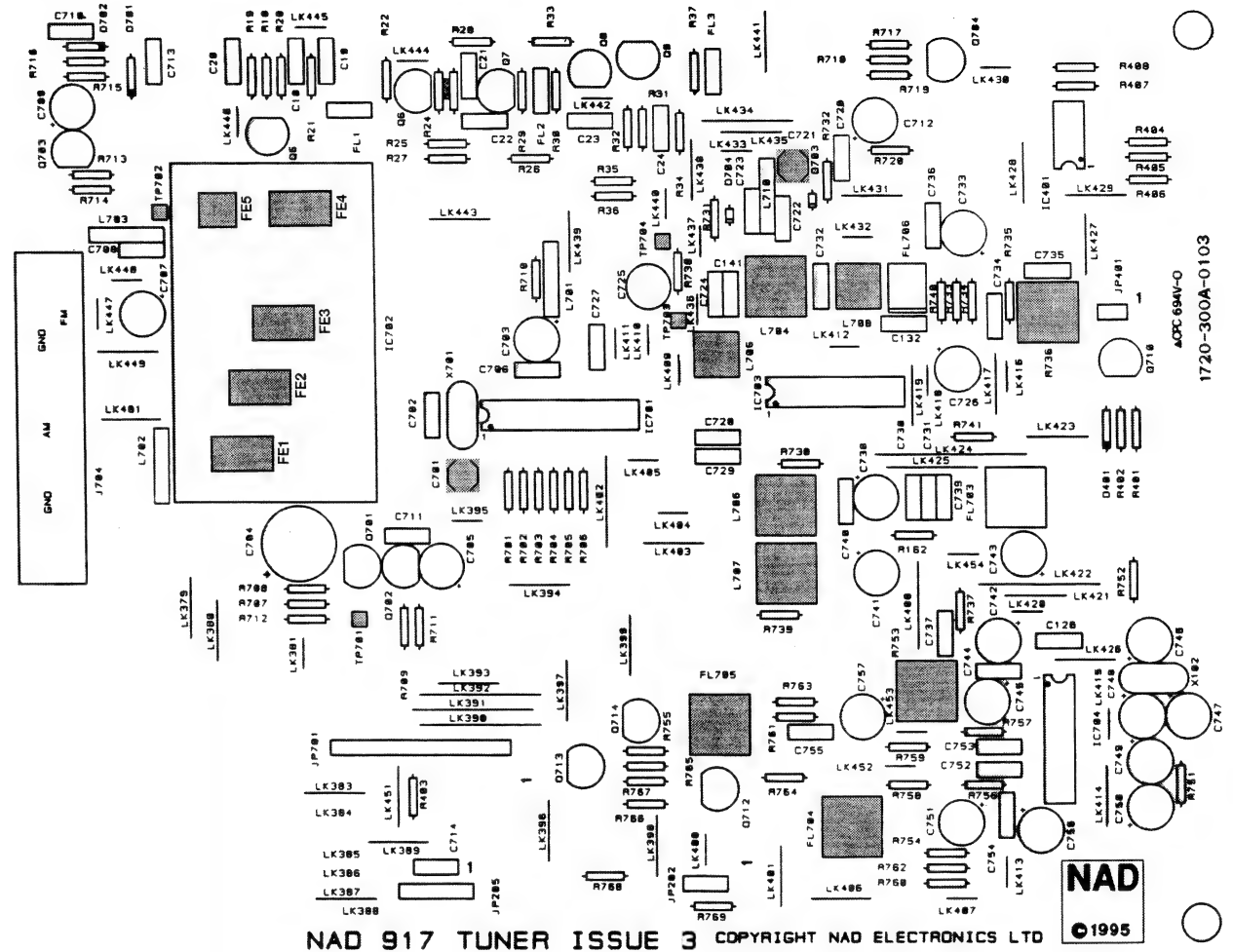


Figure No. 2.

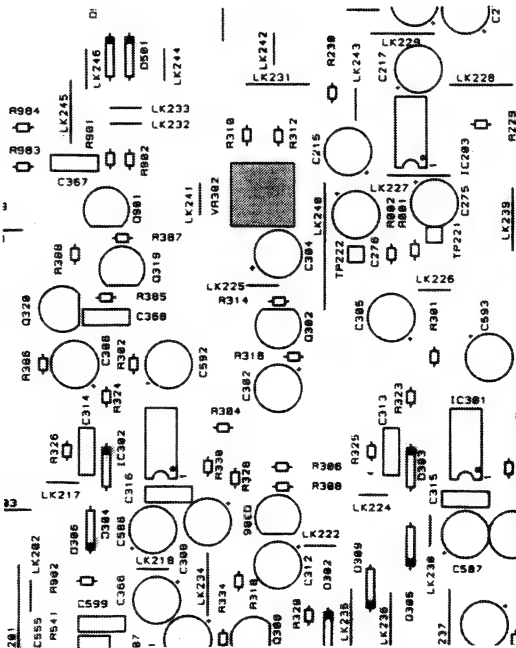
2. Pull both sides of the TOP COVER slightly outwards, tilt approximately 35° and then remove in the direction as shown in **Figure No. 2**.

# ADJUSTMENT POINTS DIAGRAM

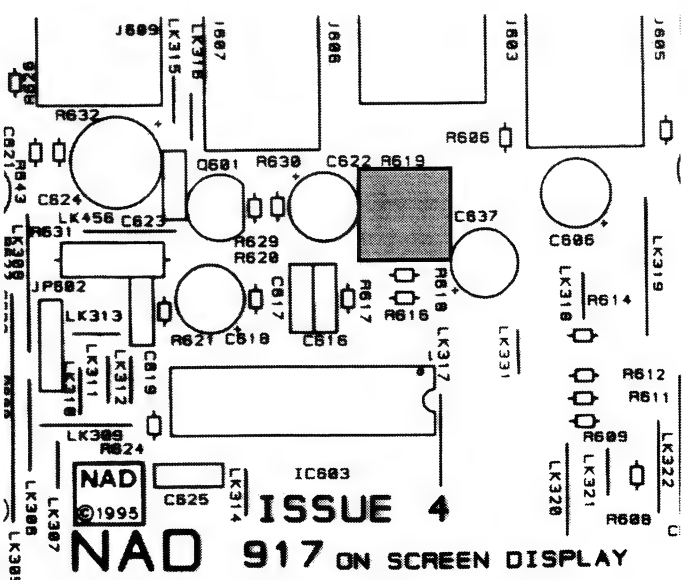
## 1. TUNER (For 917 Only)



## 2. CDR



## 3. OSD



## ALIGNMENT PROCEDURES

### FM SECTION ( For 917 Only)

AF Modulation: 1 kHz, 75 kHz Deviation, MONO Mode  
Store Frequency: 98 MHz, 87.5 MHz, 108 MHz, 90 MHz, 106 MHz  
RF Level: 75-ohm Impedance, Open circuit

### **OSCILLATION TUNING VOLTAGE**

Connect DVM between TP701 & GND.

For A16 Front-end Module:

Tune to 87.5 MHz, adjust FE4 (osc coil) to read  $3 \pm 0.5$  V.

Tune to 108 MHz, adjust FE4 (osc coil) to read  $20.5 \pm 0.5$  V.

For G55 or G58 Front-end Module:

Tune to 87.5 MHz, adjust FE4 (osc coil) to read  $1.6 \pm 0.5$  V.

Tune to 108 MHz, adjust FE4 (osc coil) to read  $8.0 \pm 0.5$  V.

### **I.F.**

Connect DVM between TP703 & TP704.

Apply 10.7 MHz, 90 dB $\mu$  via 1 kilo ohm resistor to TP702.

Adjust L706 for  $0 \pm 50$ mV reading on DVM.

Adjust L707 for minimum distortion (THD).

Repeat adjustment until no further improvement.

### **SYNTHESIZER I.F. TRACKING**

Maintain connection of DVM across TP703 & TP704.

Disconnect 10.7 MHz tap to TP702.

Apply 98 MHz, 60 dB $\mu$  to antenna input.

Tune to 98 MHz.

Adjust C701 for  $0 \pm 20$  mV reading on DVM.

Fine adjust L707 for minimum distortion.

Repeat until no further improvement.

### **Front-end IF.**

Connect DVM between LK391 and ground

Turn R736 fully counter clockwise

Apply 98 MHz, 18 dB $\mu$  to antenna

Adjust FE5 to obtain maximum reading on DVM.

### **R.F.**

Apply 98 MHz, 7 dB $\mu$  for AH, or 21 dB $\mu$  for C, to antenna input.

Check THD.

If THD > 3%, adjust FE1, FE2 & FE3 in the front-end module with non-metallic tool for minimum THD.

Check THD at 90 MHz & 106 MHz with 8 dB $\mu$  input for AH, or 22 dB $\mu$  for C.

FM Stereo: 1 kHz, 67.5 kHz devi., 60 dB $\mu$ V, Pilot signal 19 kHz, 7.5 kHz devi.

### **STEREO SEPARATION & PILOT SUPPRESSION**

Set modulated signal to Left only.

Adjust R753 for minimum output at right channel.

Set modulated signal to Right only.

Adjust R753 for minimum output at left channel.

Repeat until readings are the same.

Turn off modulating signal, leaving the pilot tone.

Adjust FL704 and FL705 for minimum outputs on right and left channels respectively.

### **SIGNAL STRENGTH METER**

Set L=R, 98 MHz, 66 dB $\mu$ .

Adjust R736 until all segments are just on.

### AM SECTION (For 917 Only)

AF Modulation: 400 Hz, 30%

For AH Version, store frequencies 603, 999, 1404 kHz.

For C & B Versions, store frequencies 600, 1000, 1400 kHz.

Connect 22 pF ceramic to capacitor between signal generator and antenna terminal.

### **OSCILLATION TUNING VOLTAGE**

Connect DVM between TP701 & GROUND.

Tune to 603/600 kHz.

Adjust L705 for  $1.75 \pm 0.05$  V reading on DVM.

### **I.F.**

Apply 999/1000 kHz, set 45 dB $\mu$  to antenna input.

Tune to 999/1000 kHz.

Adjust L708 for maximum output.

### **R.F.**

Apply 603/600 kHz, 45 dB $\mu$ .

Tune to 603/600 kHz.

Adjust L704 for maximum output.

Apply 1404/1400 kHz, 45 dB $\mu$ .

Adjust C721 for maximum output.

Repeat until no further improvement.

### CDR FUNCTION

Apply 177mV to CD input, L-CH only.

Connect AC voltmeter to L & R outputs.

Select CD input and HALL mode.

Switch CDR off.

Adjust main control volume for 500 mV output.

Switch CDR on.

Adjust VR301 for 5 dB increase in output.

Remove L input and connect to R input.

Monitor R output.

Adjust VR302 for 5 dB increase in output.

Repeat if L & R output difference exceeds 0.2 dB.

### ON-SCREEN DISPLAY (OSD) FUNCTION

Connect a video generator or any source of composite video signal to LD video input RCA jack.

Connect a video monitor to MONITOR video output RCA jack.

Press TEST once on the remote control (or DELAY continuously on the front panel) for the OSD to appear in the monitor.

Adjust R619 until OSD becomes stable and at the center of the monitor. The OSD can slightly shift to the right by a ratio of 2:1.

Press TEST once (or release DELAY) for the OSD to disappear from the monitor.

## **FUNCTIONAL DESCRIPTION:**

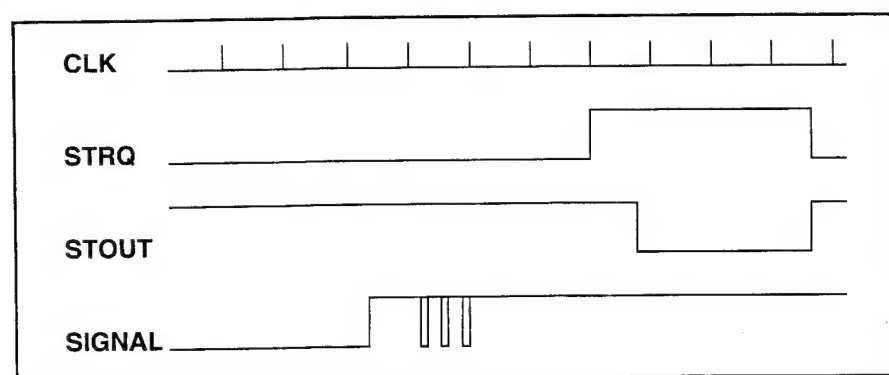
### **TUNING SEARCH (For 917 Only)**

1. The following pins are used in finding a station:

STRQ: MCU output  
STOUT: MCU output  
SIGNAL: MCU output

2. The time it takes to search from 87.5 to 108 MHz at 100 kHz step is approximately 24 seconds, which means that the station check takes 117mS per station.
3. After tuning to a station(setting the value for LM7000), the SIGNAL pin is checked by the MCU for 30  $\mu$ S. If the SIGNAL pin is low, the station search continues. If the SIGNAL pin is high, then the STRQ pin is set high by the MCU.
4. After 135 mS that the STRQ is high, the LM7000 will pull the STOUT pin to logic low for 350 mS to indicate that a station is present and the station search is terminated by the MCU.
5. After the LM7000 has pulled the STOUT pin high, then the MCU will pull the STRQ pin low.
6. After a station is found, the SIGNAL pin is not checked anymore.

Attached is the timing diagram for reference:



### **DOLBY PROLOGIC**

Dolby Prologic function provides two additional output channels, Center and Surround, which are derived from the two input channels, left and right. When the two channels are in phase, the signal will be passed to the center channel. If only the left channel has signal, the signal will be passed to the left channel without sharing to other channels. Likewise, signal at right channel only would go the right channel. If the signals are out of phase by 180°, the signal is passed to the rear surround channels.

In fact, the surround left channel and the surround right channel are identical. It is better to have two rear speakers at the rear corners for better sound effect.

If the left and right channels are out of phase in between 0° and 180°, the signal will be shared in proportion to the phase between the channels. That is, the out of phase signal between the two front channels will be shared by the rear surround channel. Only the signal which is discrete to left or right channel will be remained in left or right channel.

## **FUNCTIONAL TEST**

### **MONITOR DISPLAY**

Video display from MONITOR output indicates the status of the selected channel as on the panel display. The label on the screen should be adjusted to the center. No distortion should occur with either PAL or NTSC signal. The center of the text label may be allowed to be shifted slightly to the right. The ratio between the distances of the label center to the left and right edges should be less than 2.

### **SELF TEST - OUTPUTS ONLY**

When the test program is selected by pressing the 'TEST' button on the remote control, a sequence of noise signal will be generated from the output channels. The 5 LEDs on the panel will turn on sequentially when the corresponding channel is selected by the test program.

### **S-VHS TEST**

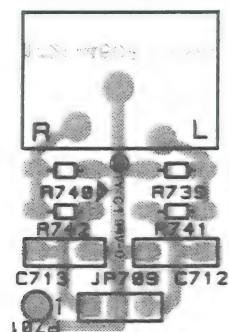
If there is no S-VHS signal available from the video generator, black screen signal with cross and circle pattern may be used. The colour burst is set to 300mVpp and the horizontal synchronous signal is set to 300mVpp also. The signal is fed into both the two SVHS input pins of the selected input channel. Monitor these two SVHS video outputs on the video terminal, one at a time, and check for the stability of the text display.

For better functional check, the outputs at the S-VHS terminal should be monitored with a dual trace oscilloscope and check for any obvious delay between the two colour burst signals. Colour burst and horizontal sync pulse should still be 300mV  $\pm$  1 dB on chrominance and luminance channels of SVHS outputs (VCR2 and Monitor).

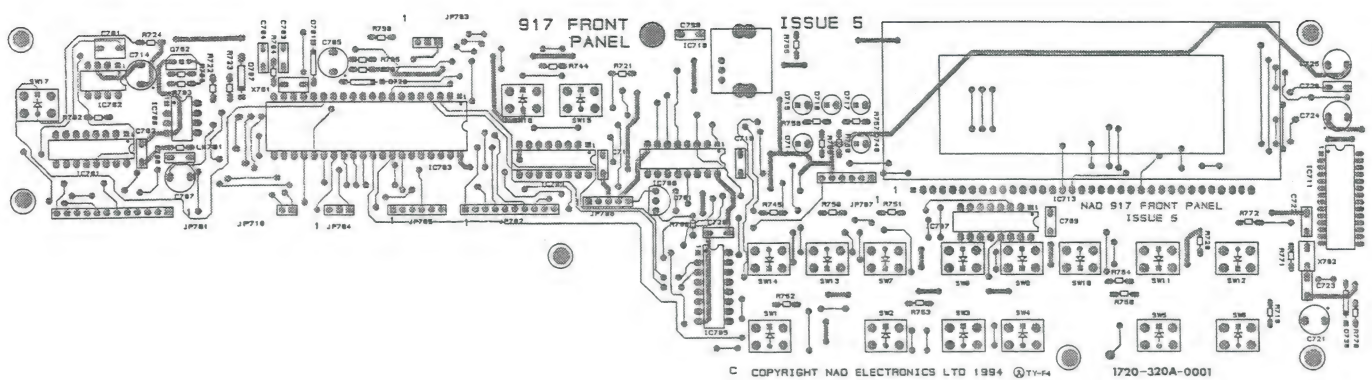
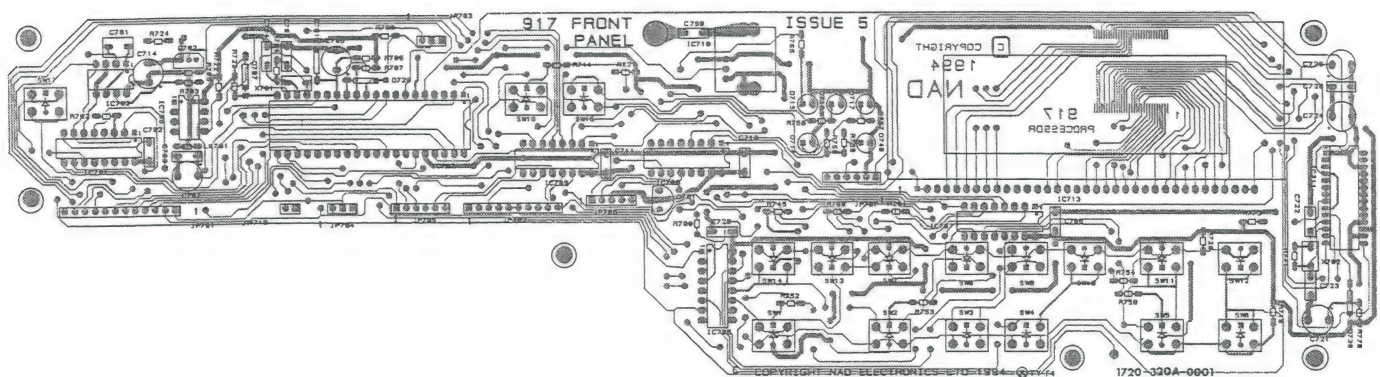


### 117 FRONT PANEL/ POWER SWITCH/ TUNER INPUT

0000 3084-1571  
LED1  
JF712  
1

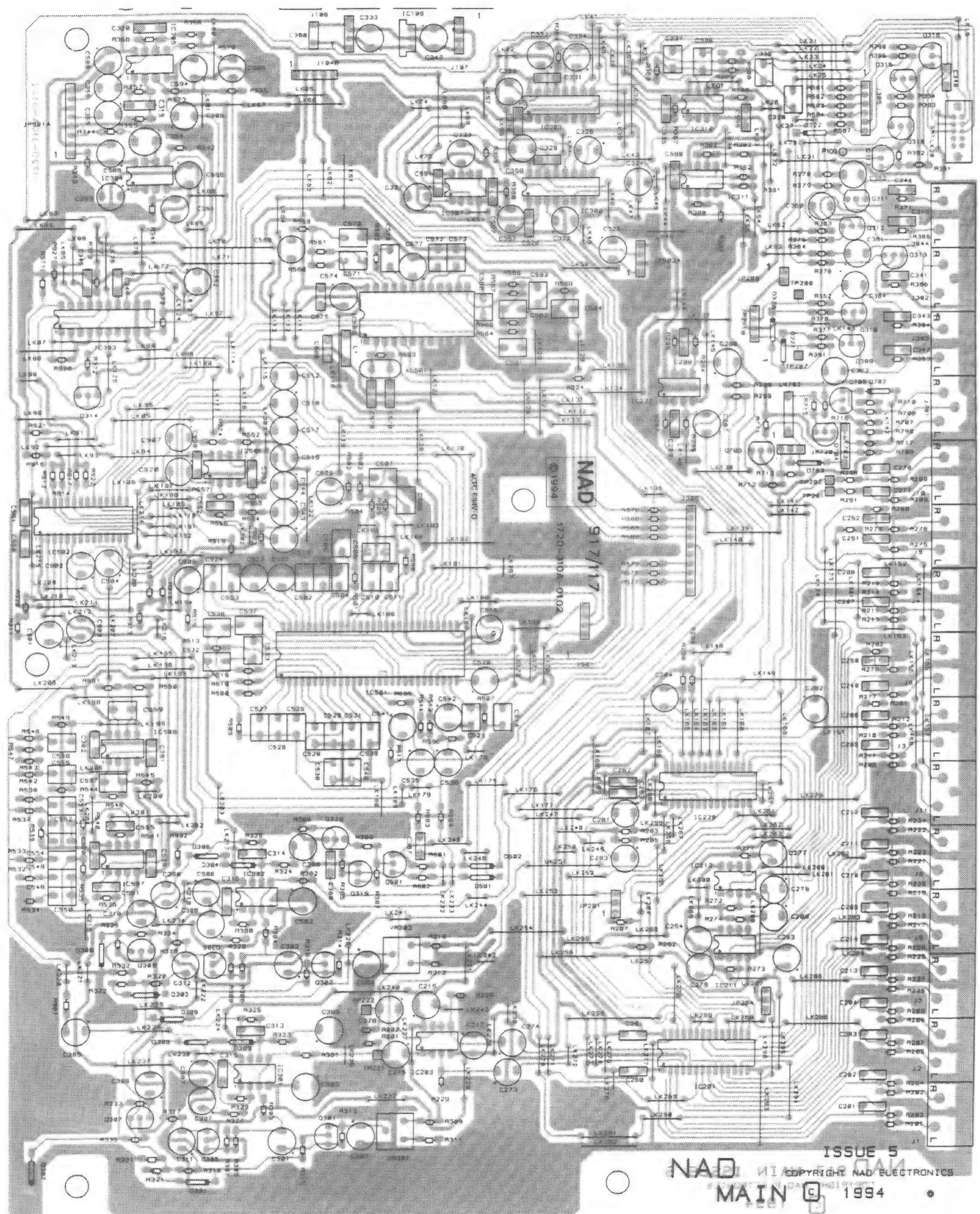


## COMPONENT SIDE

**SOLDER SIDE**



# AUDIO PROCESSOR



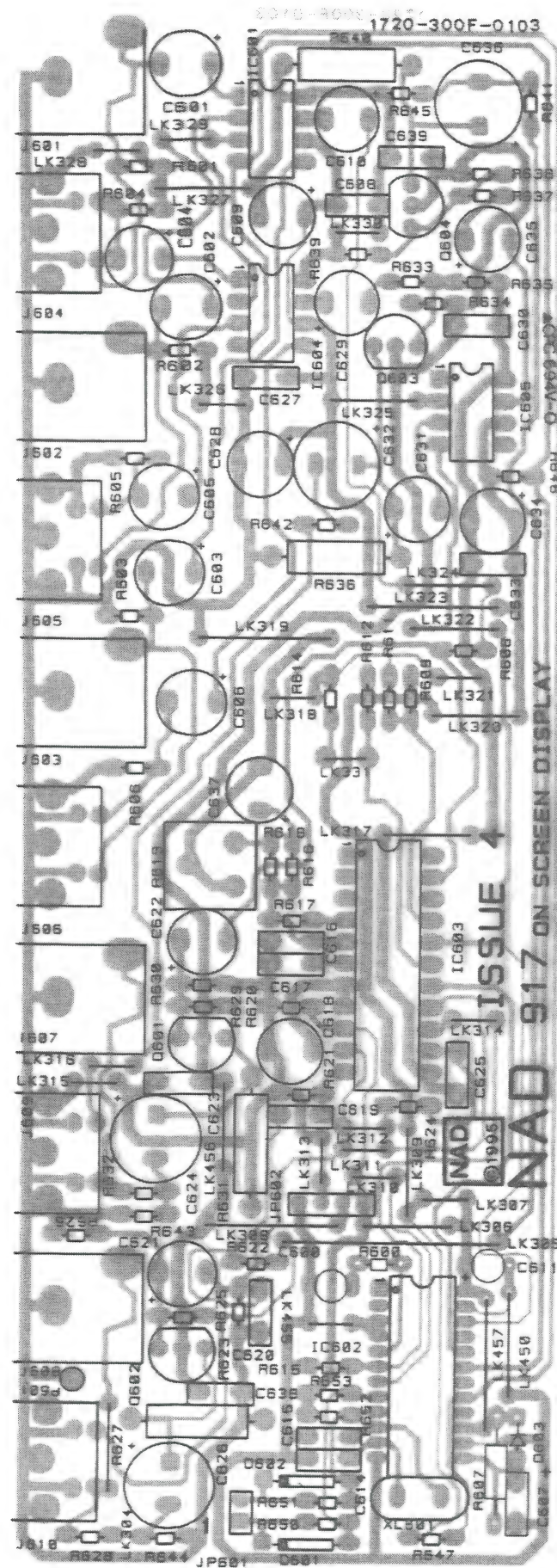


NAD 91/ TUNER ISSUE 3 COPYRIGHT NAD ELECTRONICS LTD

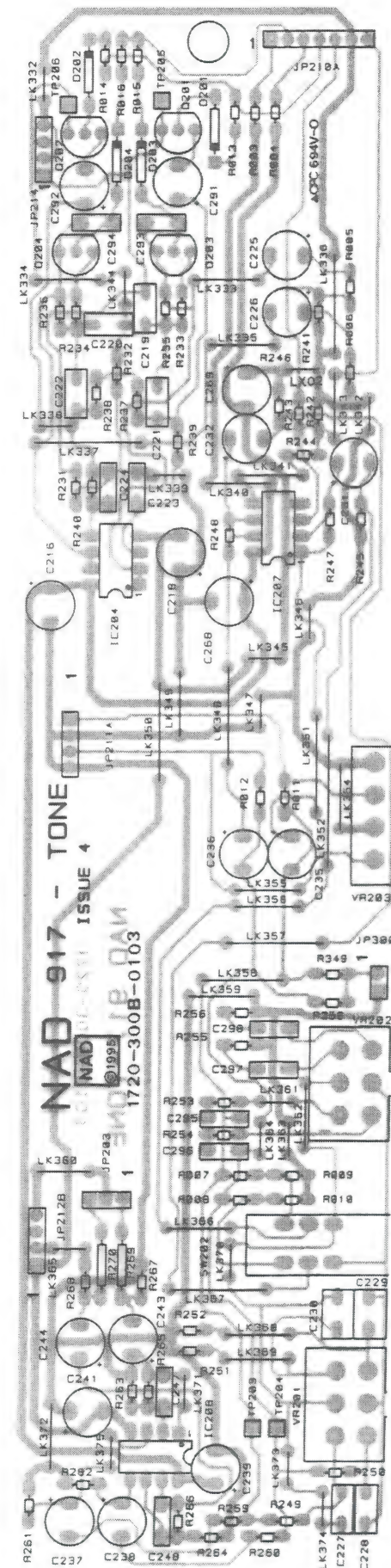




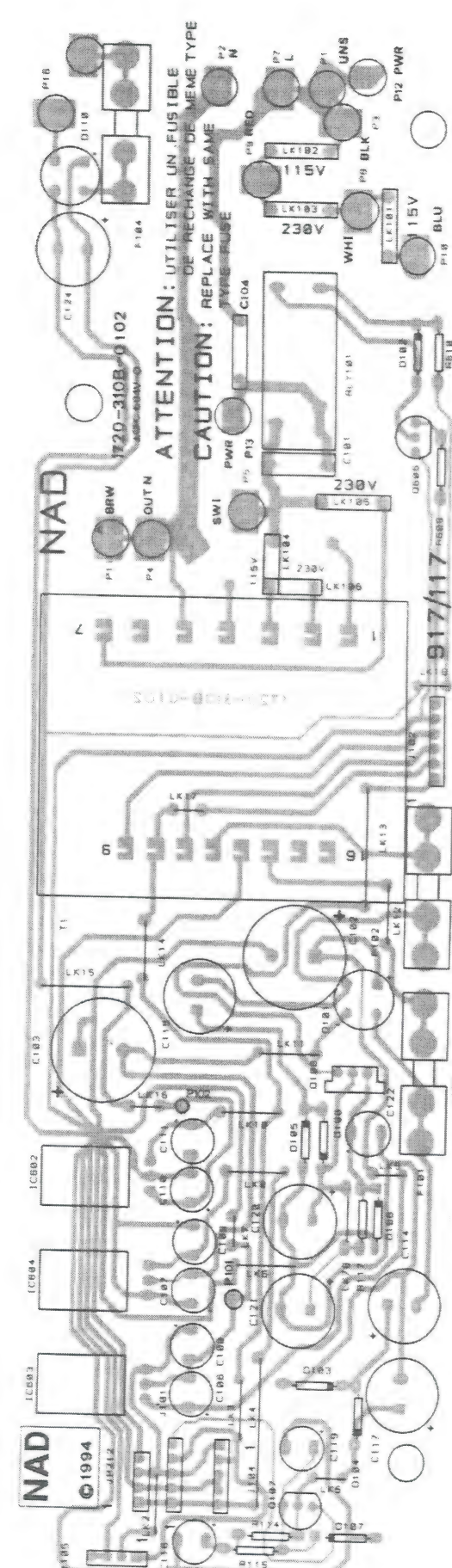
# VIDEO



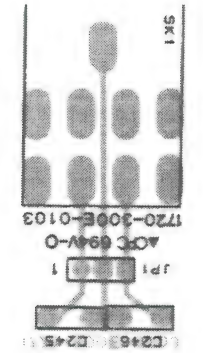
# TONE



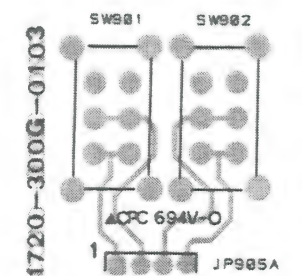
# POWER SUPPLY



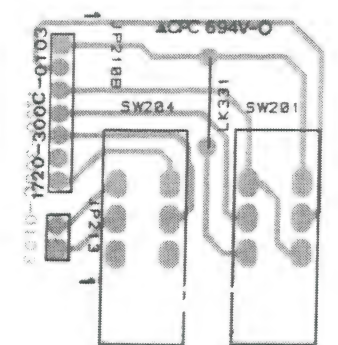
# HEADPHONE



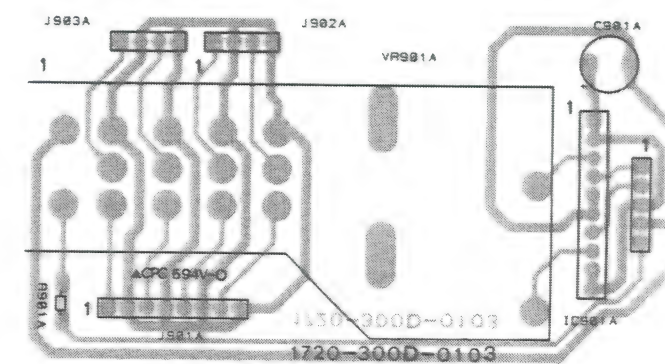
# SURROUND/CENTER SWITCH



# PUSH-SWITCH

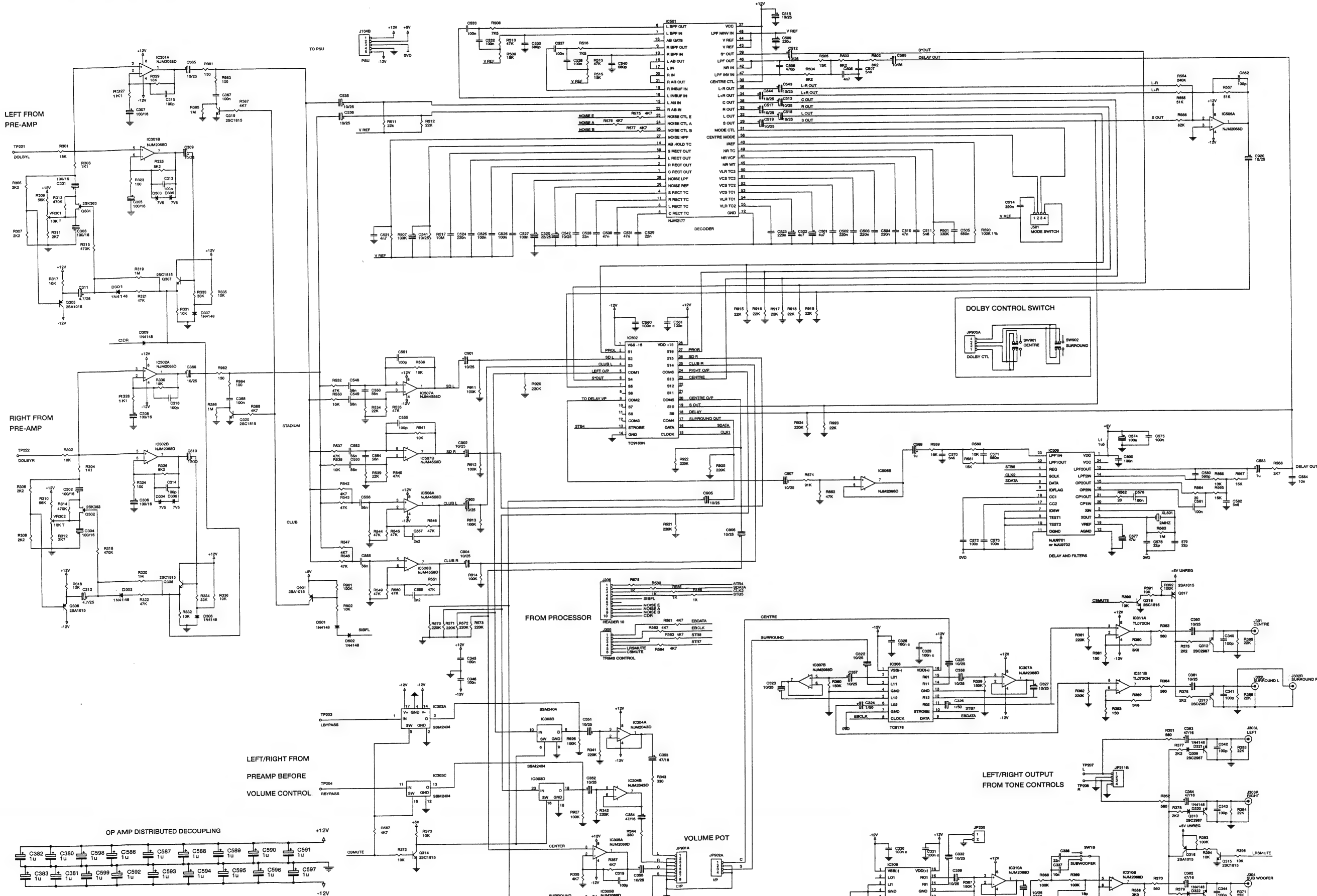


# VOLUME





SCHEMATIC DIAGRAM  
AUDIO PROCESSOR PCB

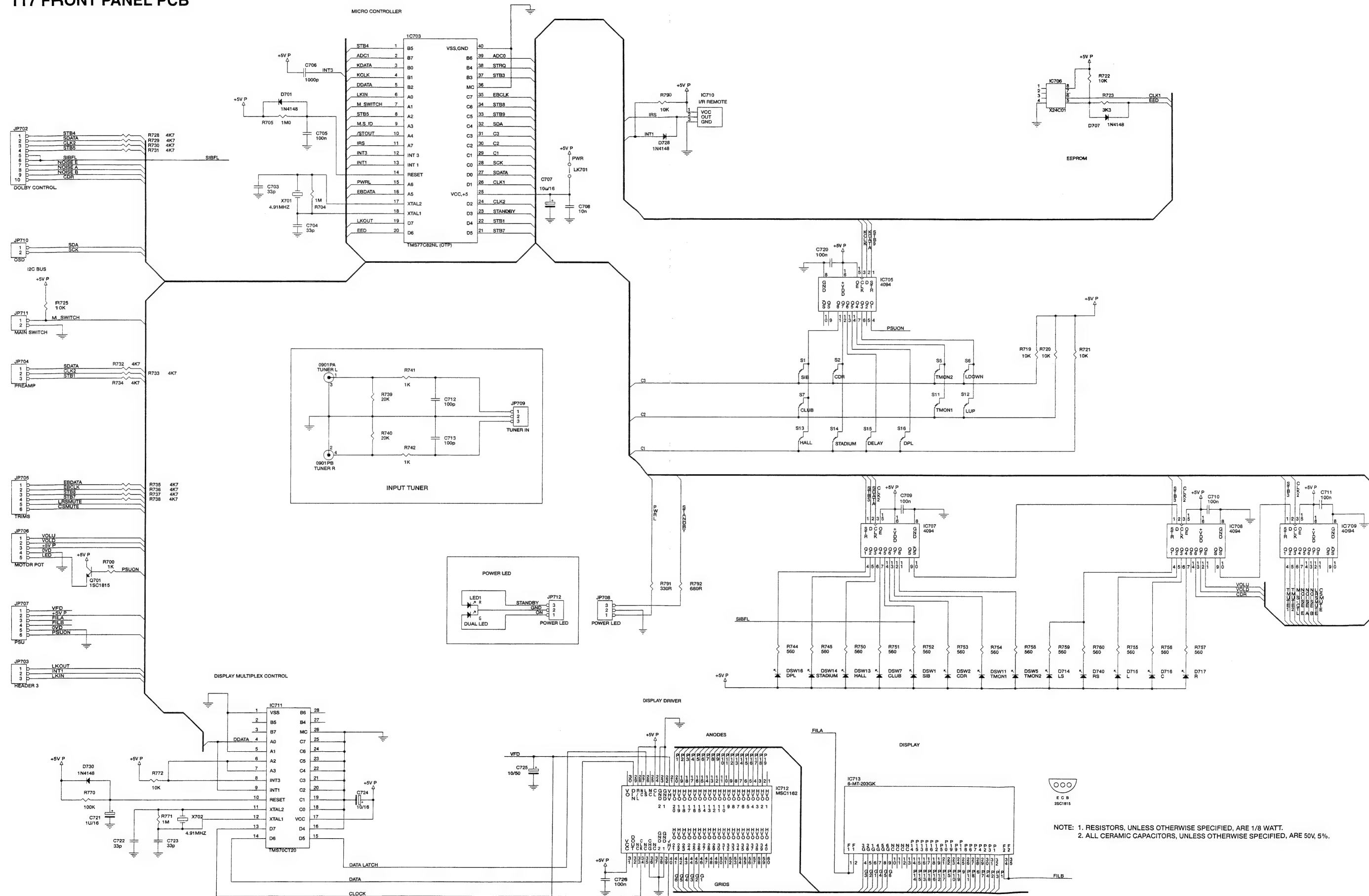


NOTE: 1. Resistors, unless otherwise specified, are 1/8 Watt.  
2. All ceramic capacitors, unless otherwise specified, are 50V, 10%.

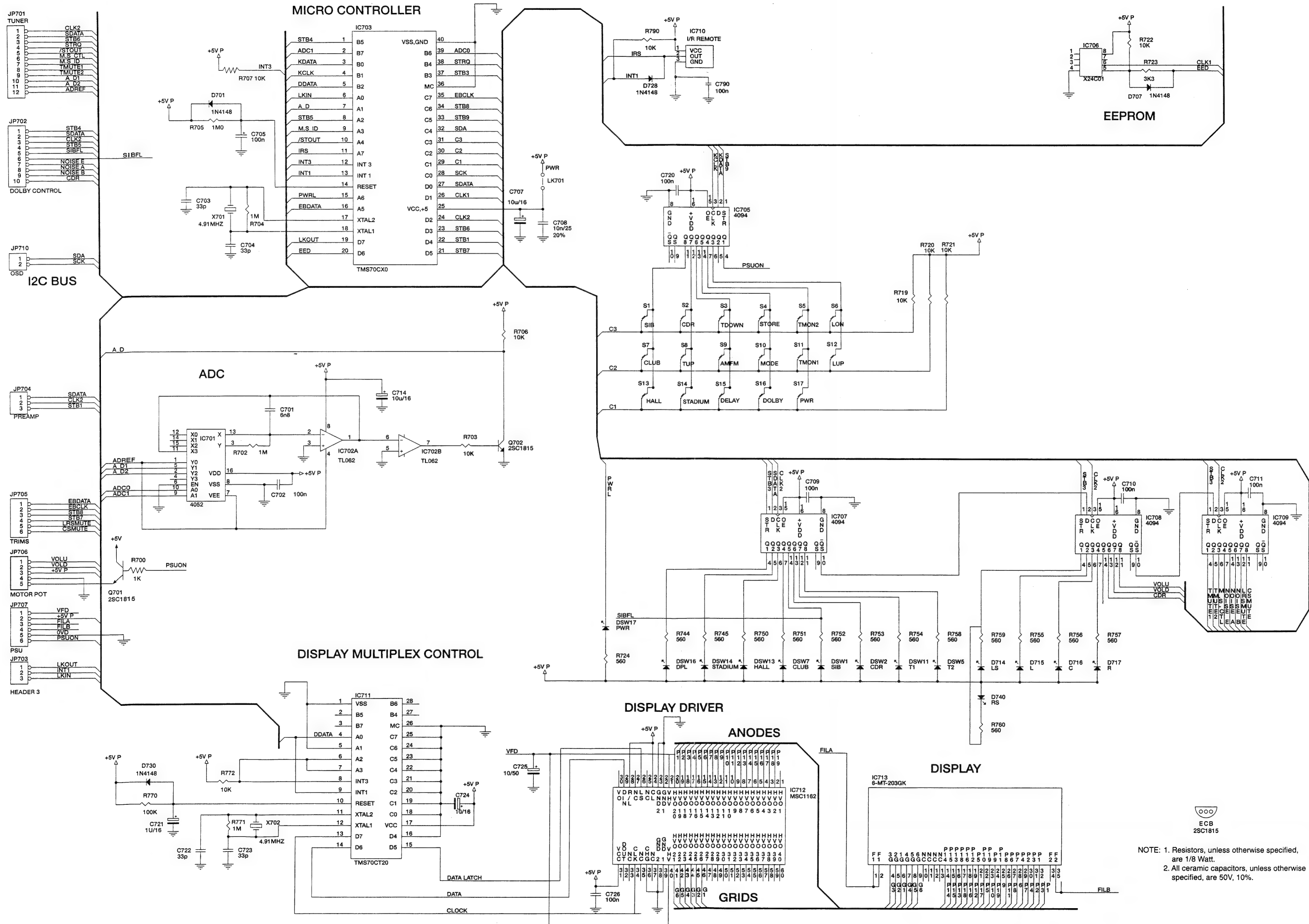
DGS  
28K363

ECB  
25A1015  
25C1815

# 117 FRONT PANEL PCB



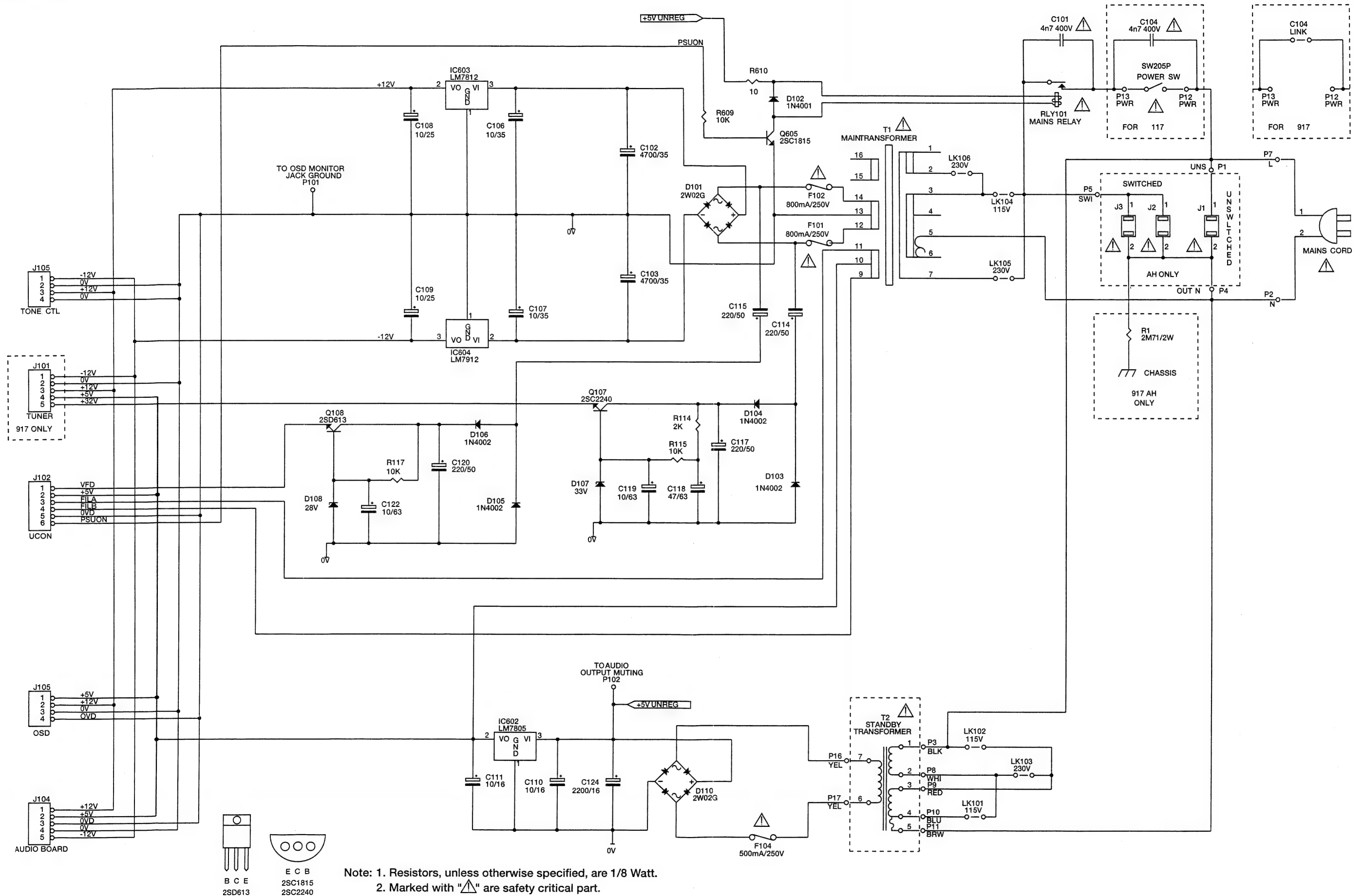
917 FRONT PANEL PCB



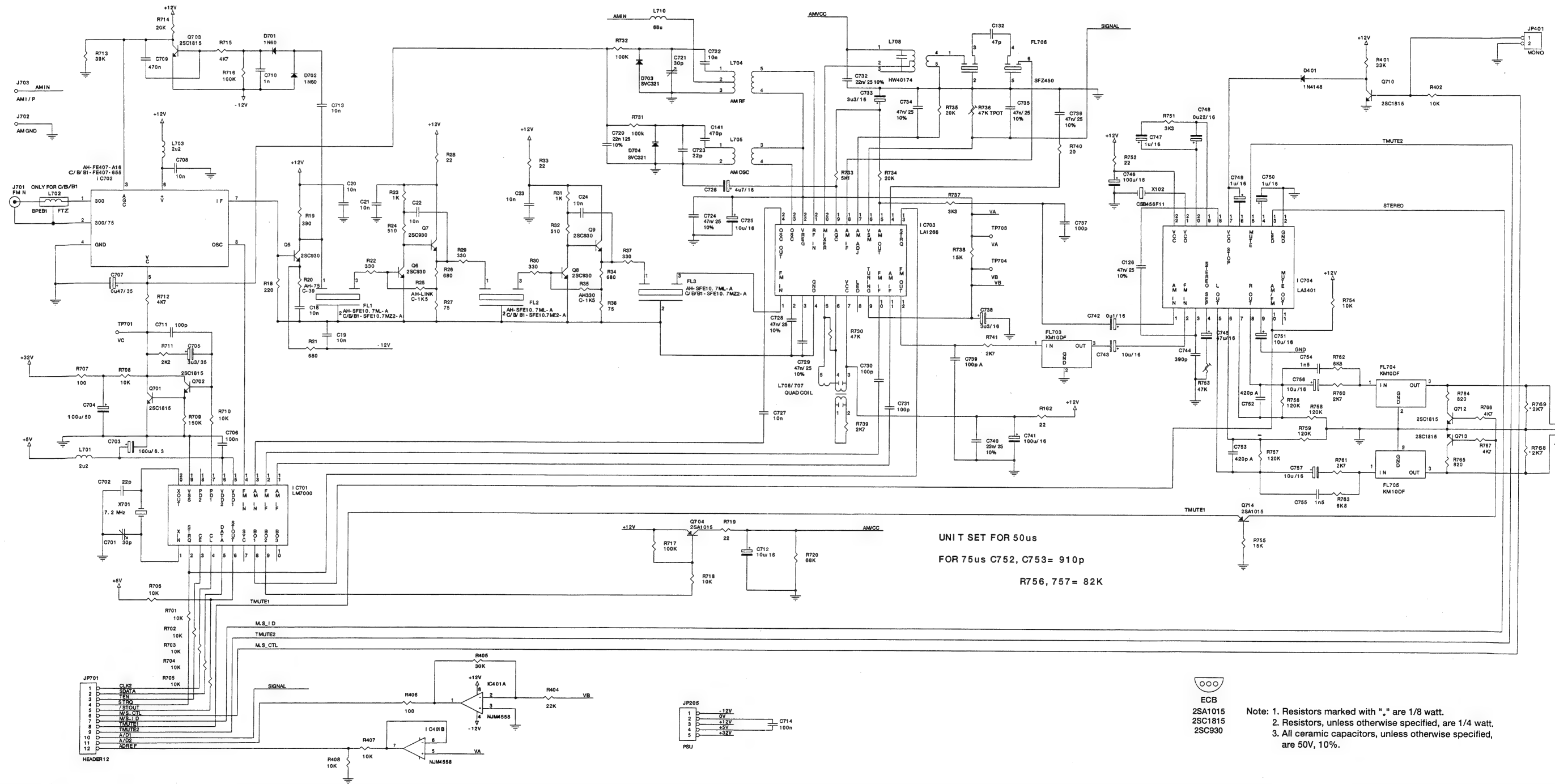
NOTE: 1. Resistors, unless otherwise specified, are 1/8 Watt.  
2. All ceramic capacitors, unless otherwise specified, are 50V, 10%.

NOTE: 1. Resistors, unless otherwise specified, are 1/8 Watt.  
2. All ceramic capacitors, unless otherwise specified, are 50V, 10%.

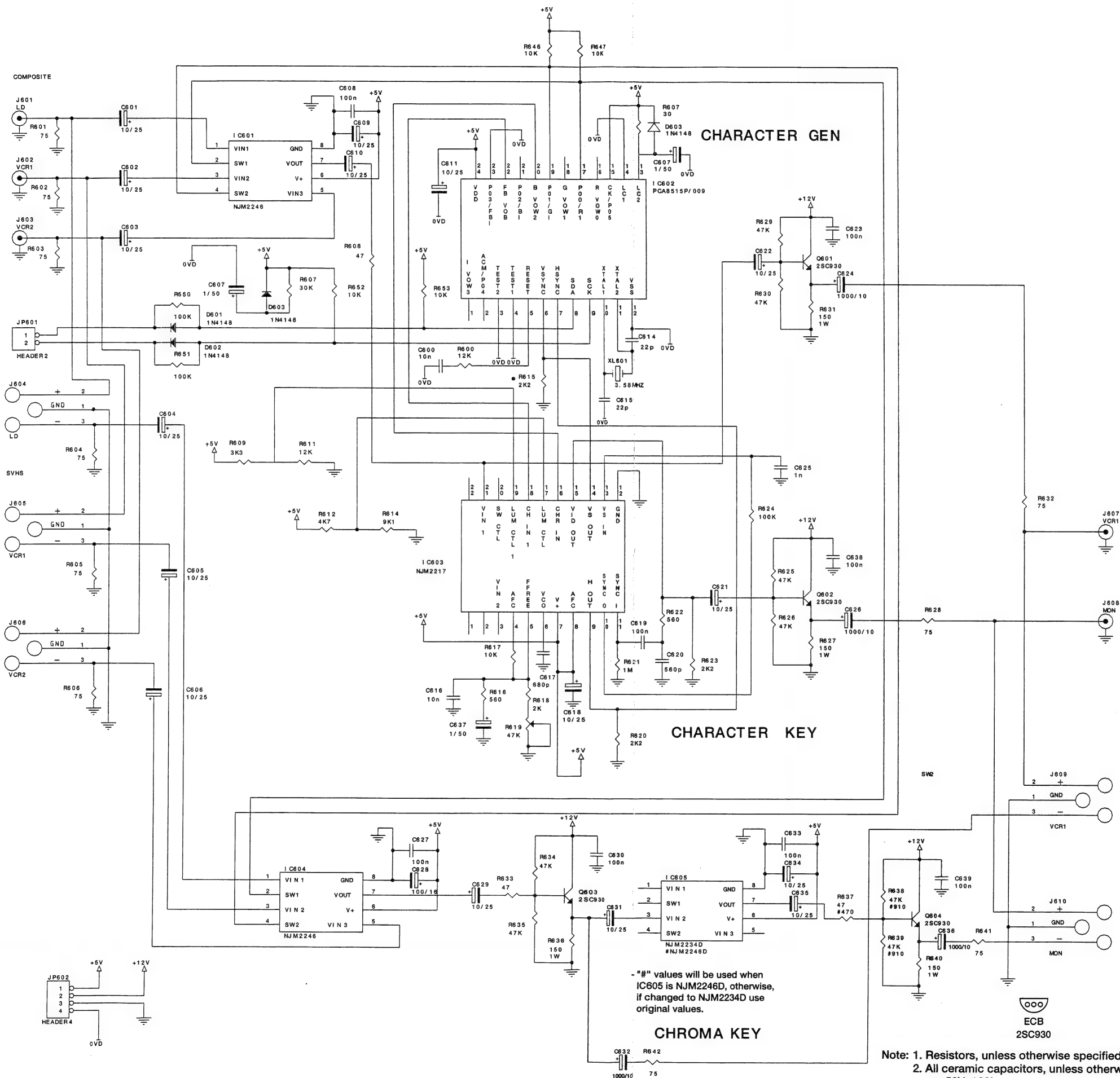
## PSU PCB



# 917 TUNER PCB

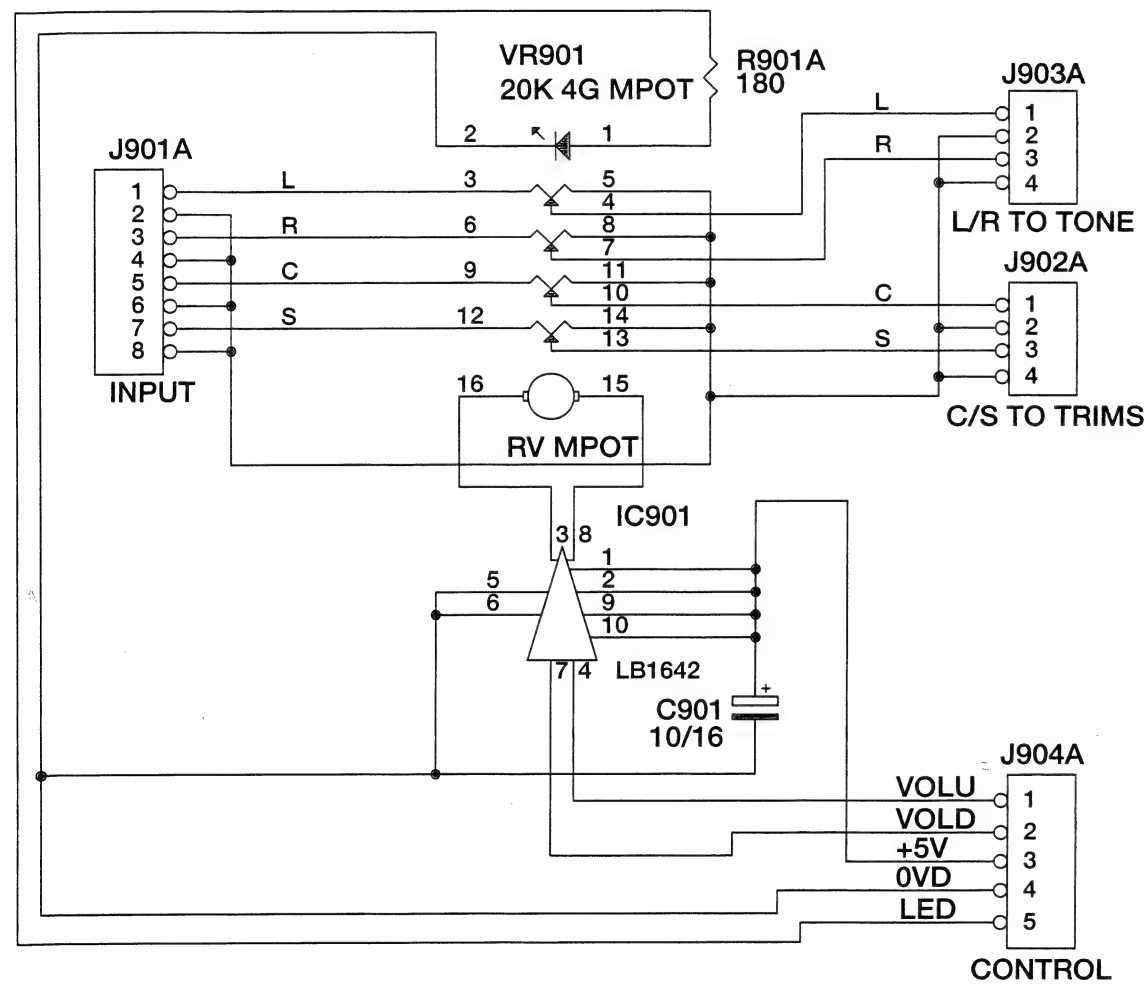


VIDEO PCB





## MOTOR POT PCB

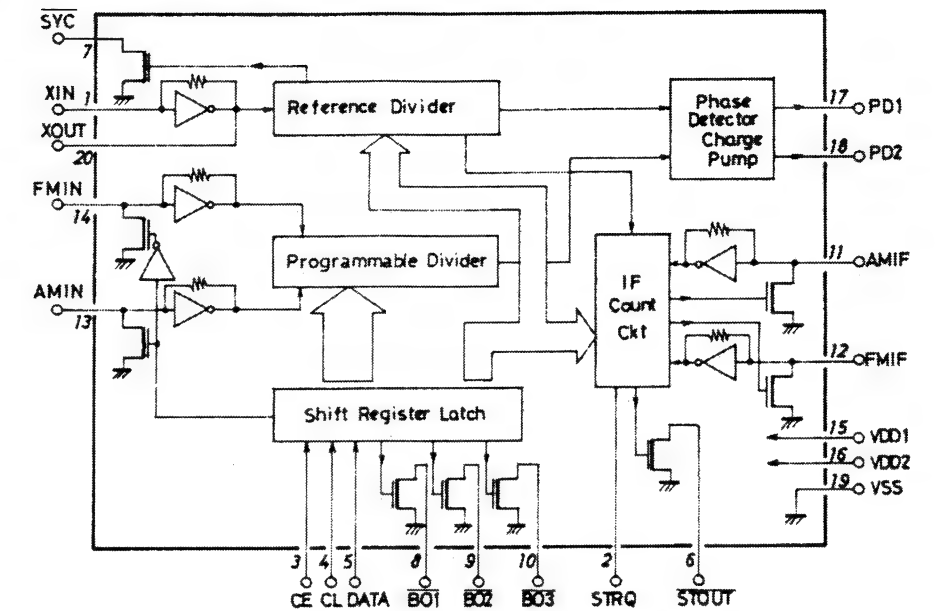


NOTE: Resistor, unless otherwise specified, is 1/8 Watt.

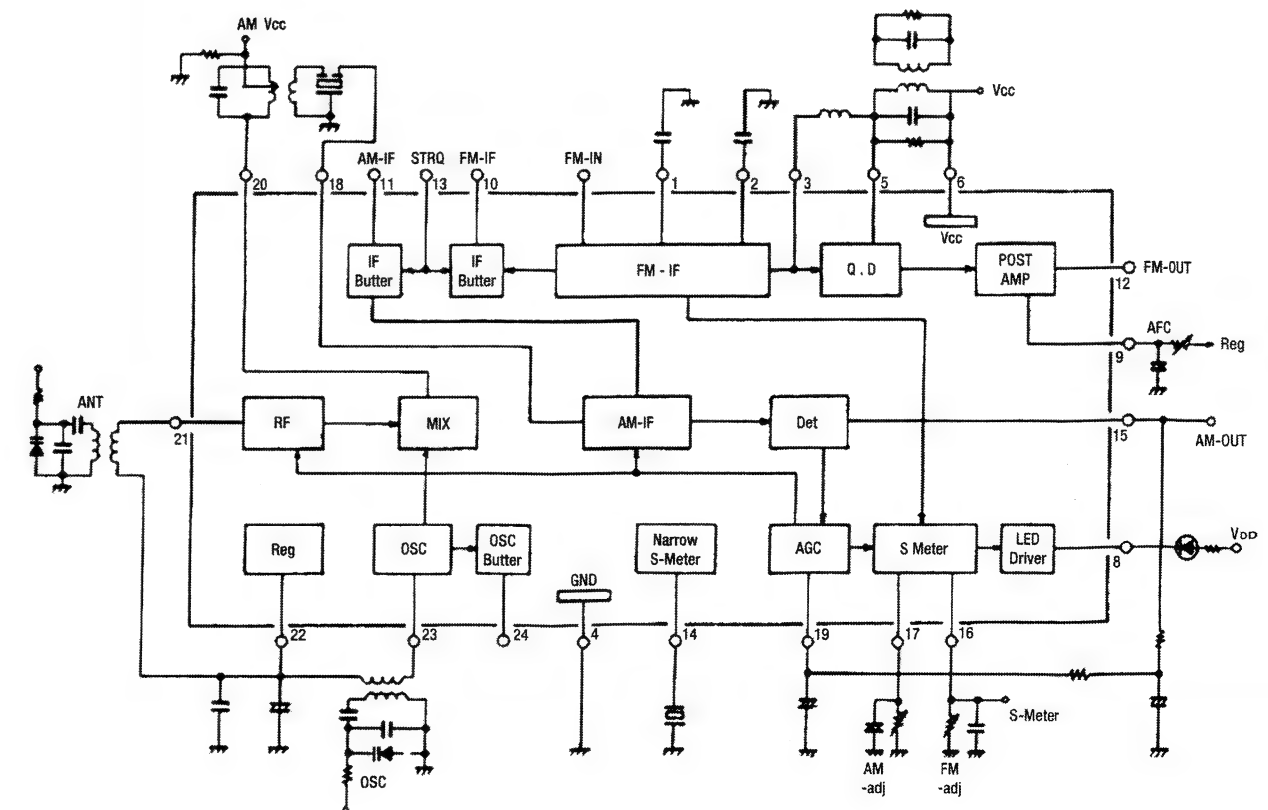
## IC BLOCK DIAGRAM

TUNER (For 917 only)

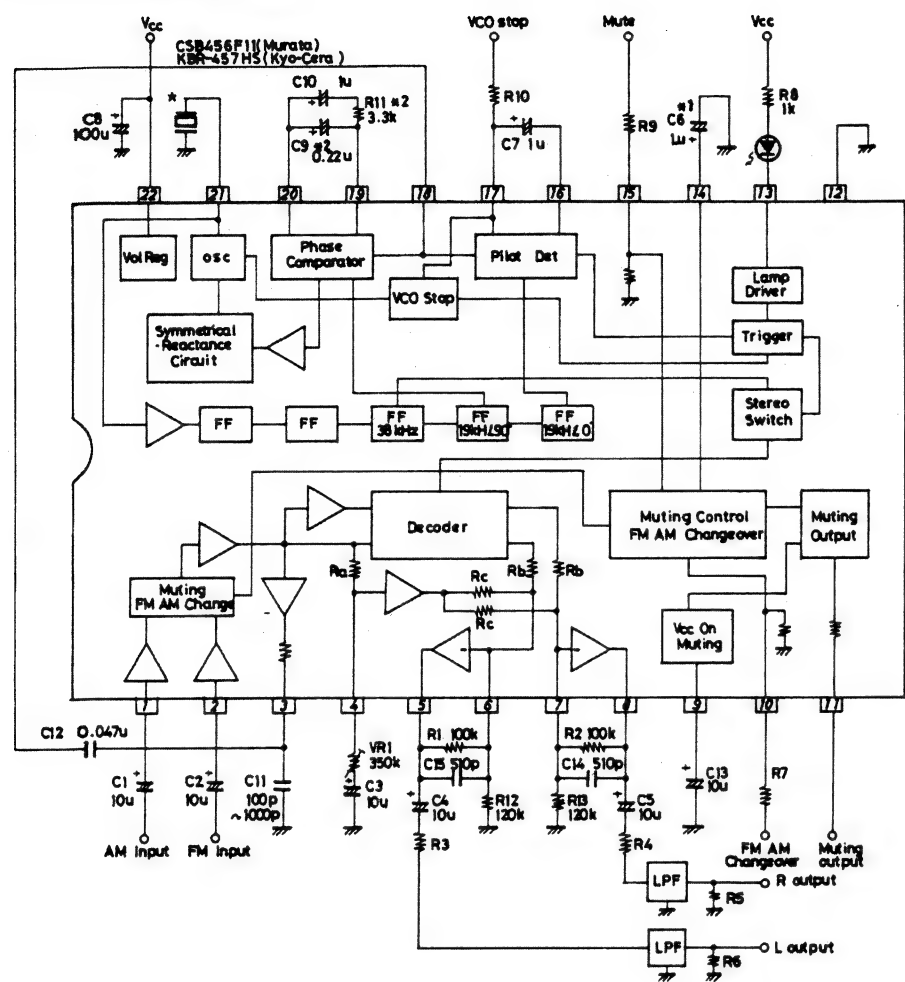
### IC701: LM7000 (BLOCK DIAGRAM)



### IC703: LA1266 (BLOCK DIAGRAM)



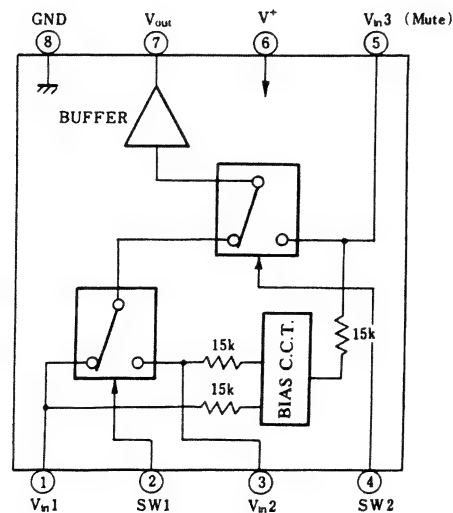
IC704: LA3401 (BLOCK DIAGRAM)



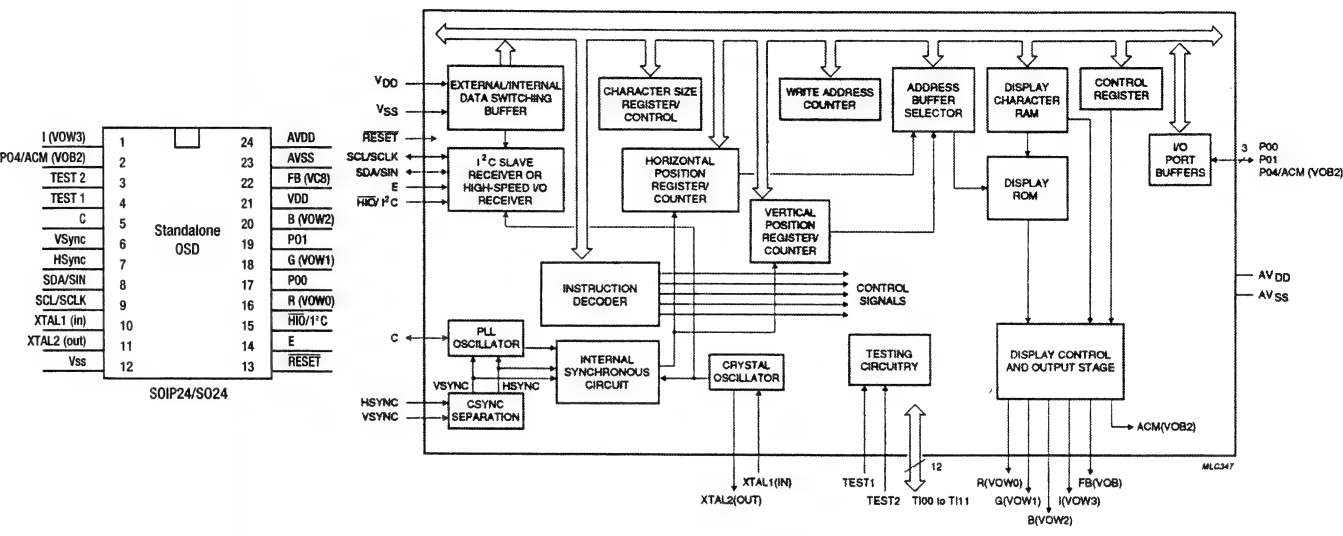
VIDEO BOARD

IC601/604: NJM2246

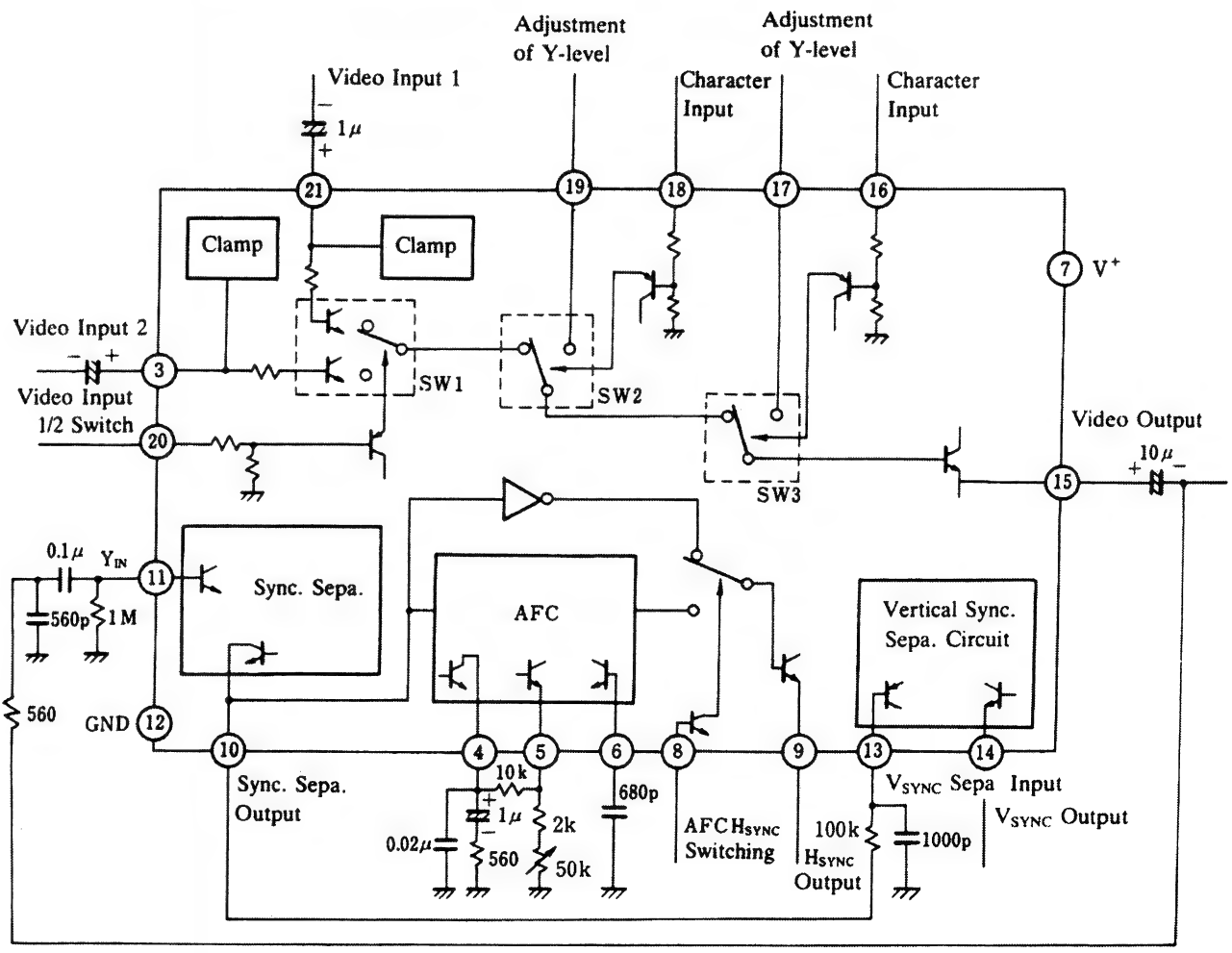
IC605: NJM2234D



IC602: PCA8515 & BLOCK DIAGRAM

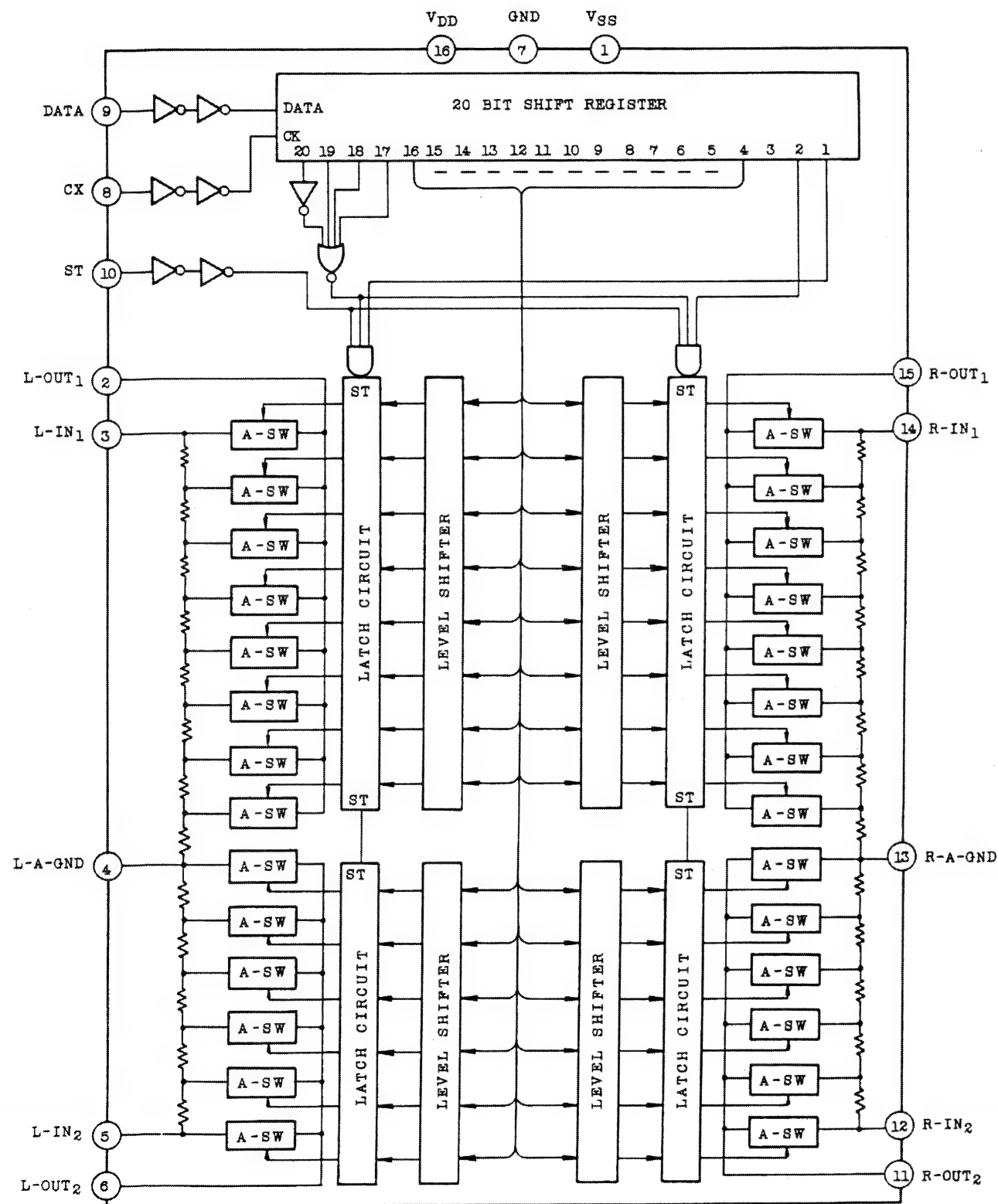


IC603: NJM2217 (BLOCK DIAGRAM)

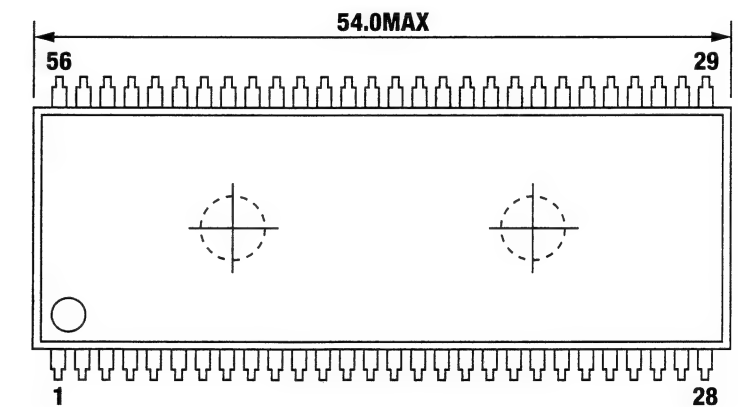
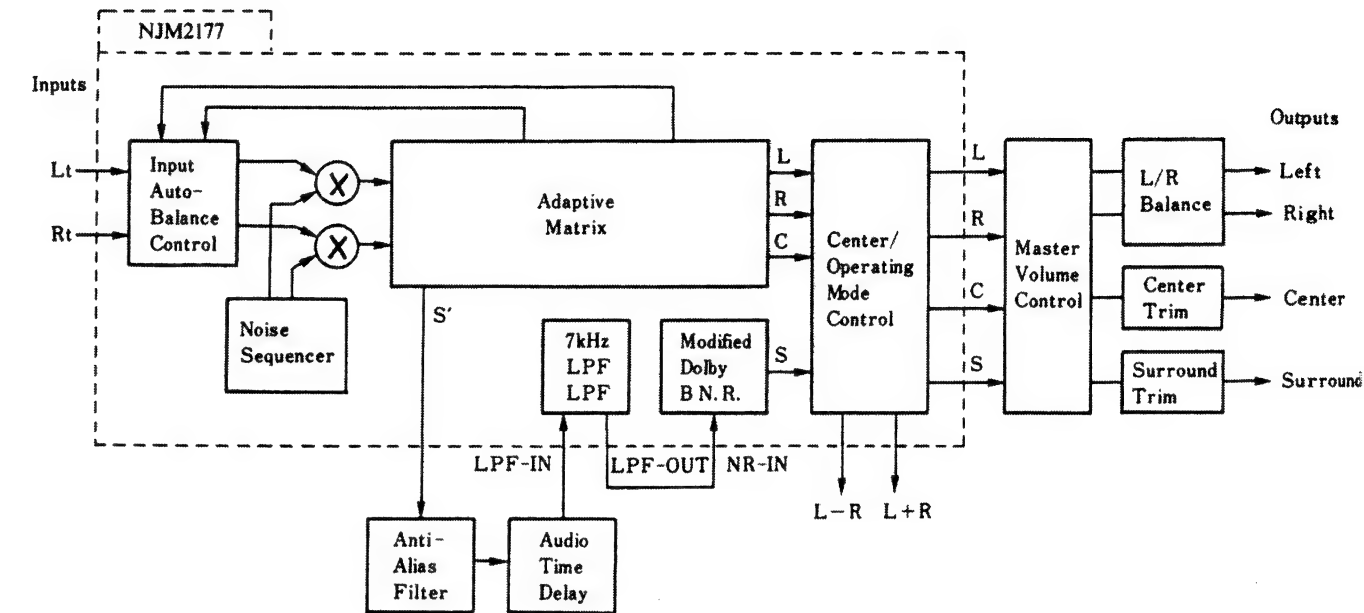


AP BOARD

IC308/309: TC 9176 ELECTRONIC VOLUME (BLOCK DIAGRAM)

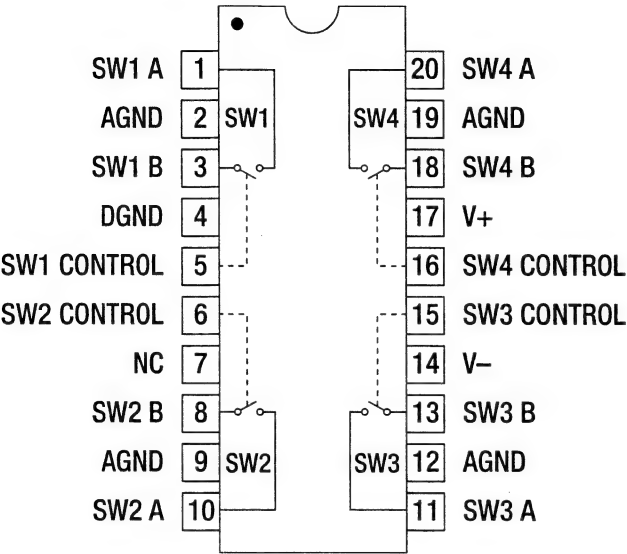


IC501: NJM2177 (DOLBY PROLOGIC)

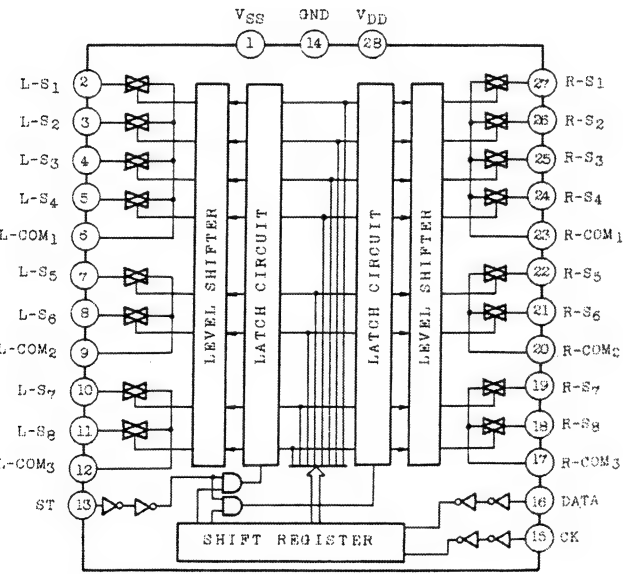


PIN No.	Pin Name	PIN No.	Pin Name	PIN No.	Pin Name	PIN No.	Pin Name
1.	C-RECT-OUT	15.	L-AB-IN	29.	S-OUT	43.	VREF
2.	R-RECT-OUT	16.	L-AB-OUT	30.	CENTER-CNT	44.	VREF
3.	L-RECT-OUT	17.	L-IN	31.	MODE-CNT	45.	NR-WT
4.	S-RECT-TC	18.	L-INBUF-OUT	32.	L-OUT	46.	LPF-OUT
5.	C-RECT-TC	19.	R-INBUF-OUT	33.	R-OUT	47.	LPF-INV-IN
6.	L-BPF-OUT	20.	R-IN	34.	L+R-OUT	48.	LPF-NINV-IN
7.	L-BPF-IN	21.	R-AB-OUT	35.	L-R-OUT	49.	NR-TC
8.	L-RECT-TC	22.	R-AB-IN	36.	CENTER-MODE	50.	VLR-TC3
9.	R-BPF-OUT	23.	NOISE-CNT-E	37.	V+	51.	VCS-TC3
10.	R-BPF-IN	24.	NOISE-CNT-A	38.	C-OUT	52.	VCS-TC2
11.	R-RECT-TC	25.	NOISE-CNT-B	39.	S'-OUT	53.	VCS-TC1
12.	GND	26.	NOISE-REF	40.	IREF	54.	VLR-TC1
13.	AB-GATE	27.	NOISE-HPF	41.	NR-VCF	55.	VLR-TC2
14.	AB-HOLD-TC	28.	NOISE-LPF	42.	NR-IN	56.	S-RECT-OUT

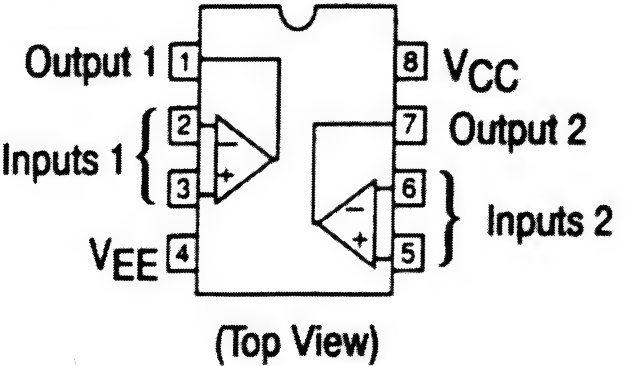
IC303: SSM2404 (QUAD ANALOG SWITCH)



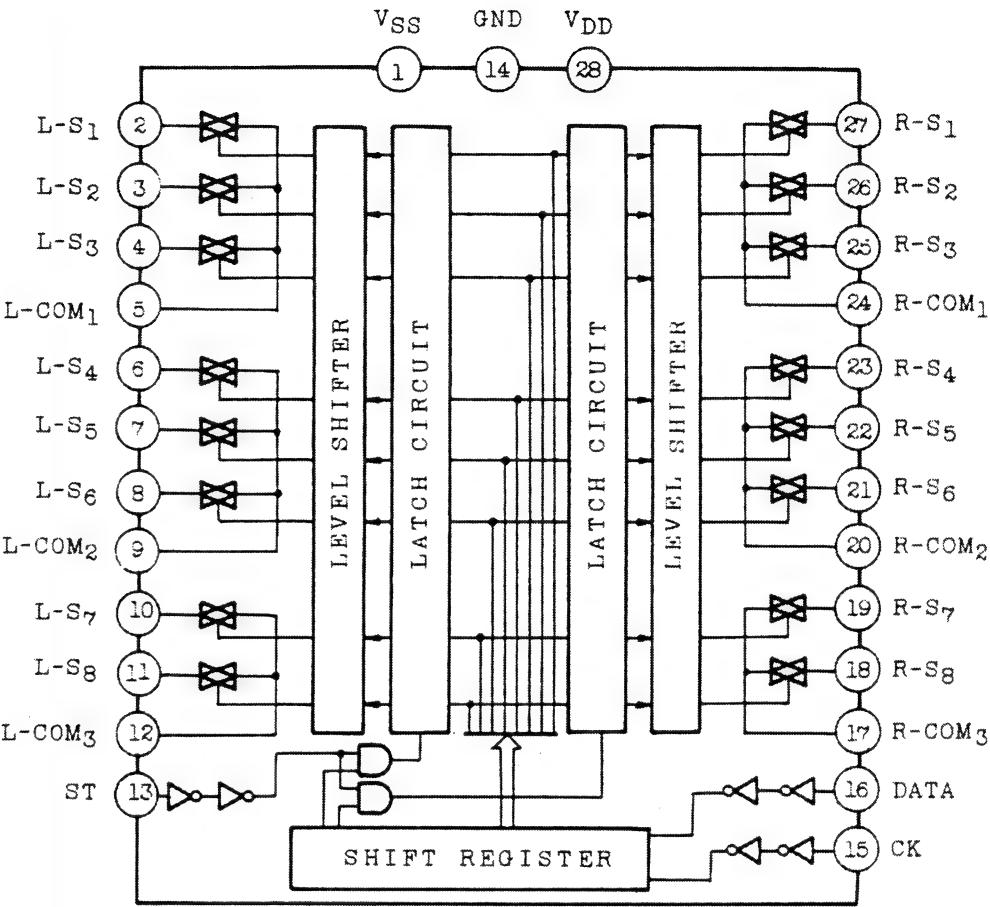
IC220: TC9164N



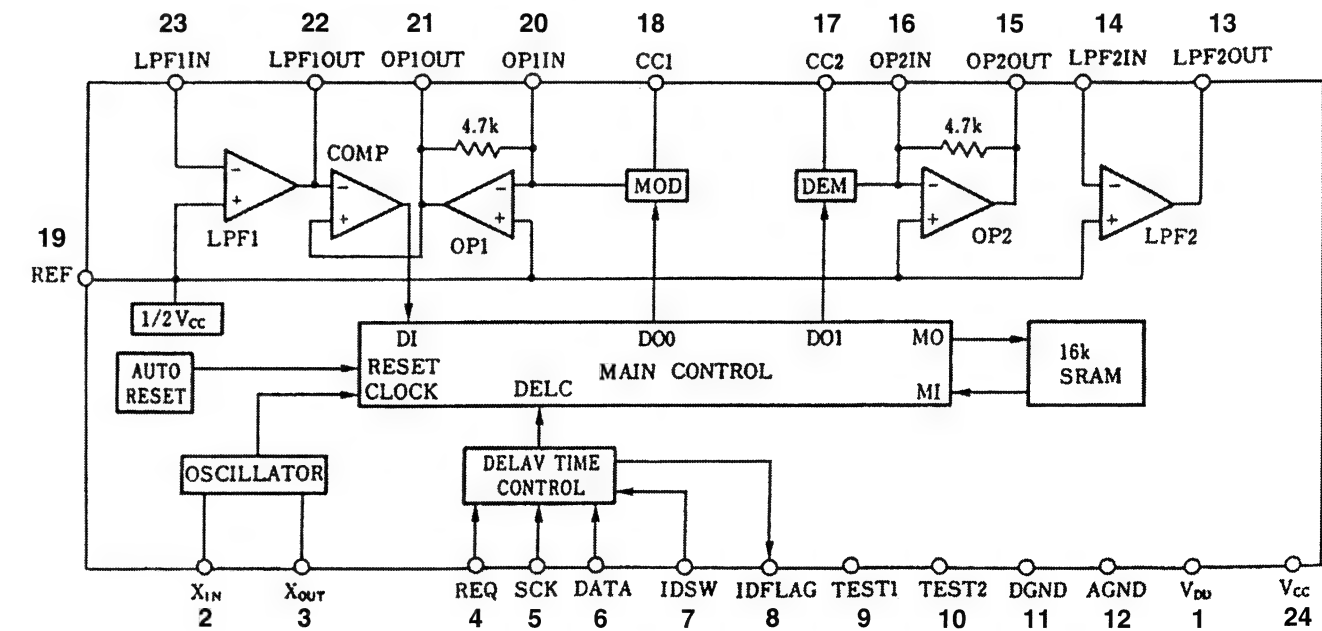
IC221: NJM4558, IC301/302: NJM2068D, IC304: NJM2043D, IC311: TL072CN, IC702: TL062 (ON PANEL BOARD)



IC502: TC9163N

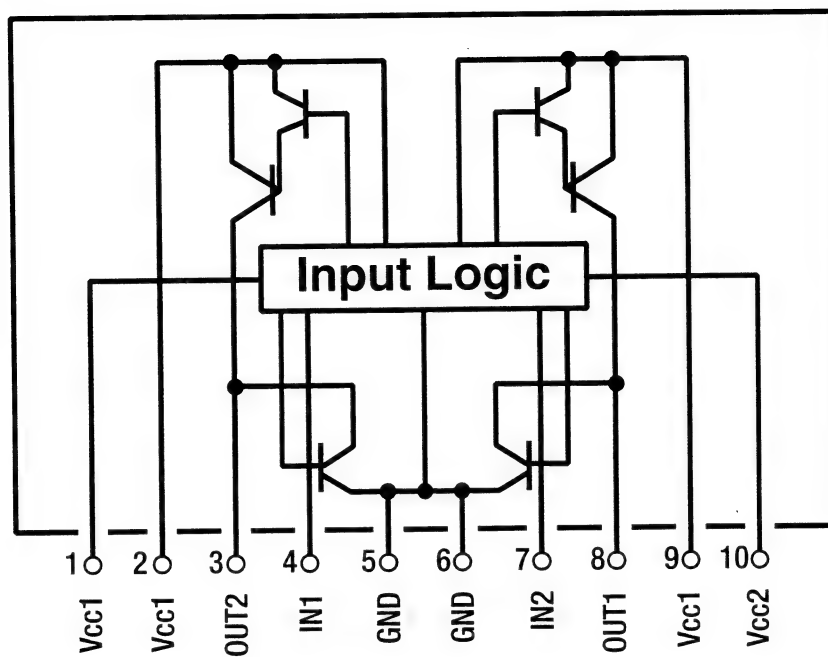


IC506: NJU 9701 (DELAY AND FILTER)



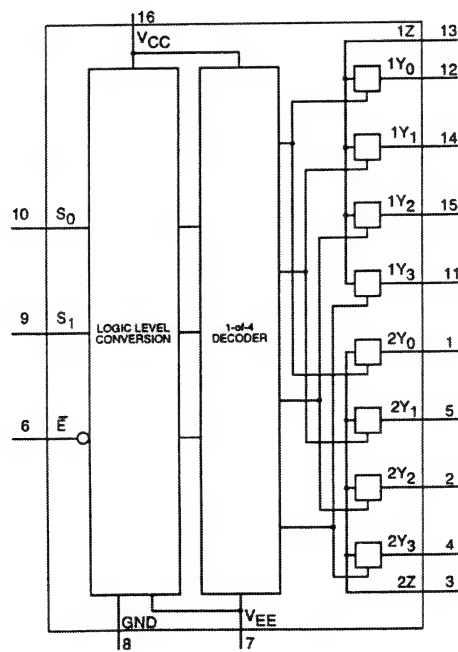
## MOTOR POT BOARD

IC901: LB1642 (EQUIVALENT CIRCUIT BLOCK DIAGRAM)

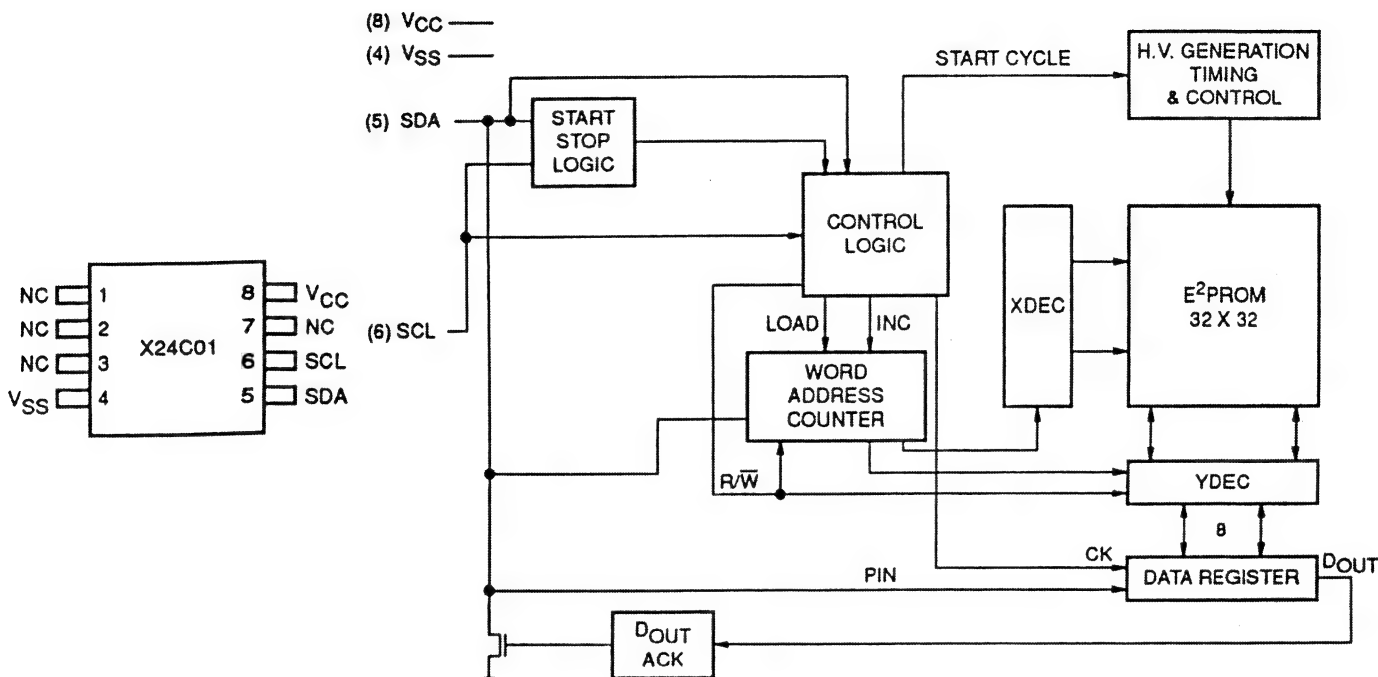


## PANEL BOARD

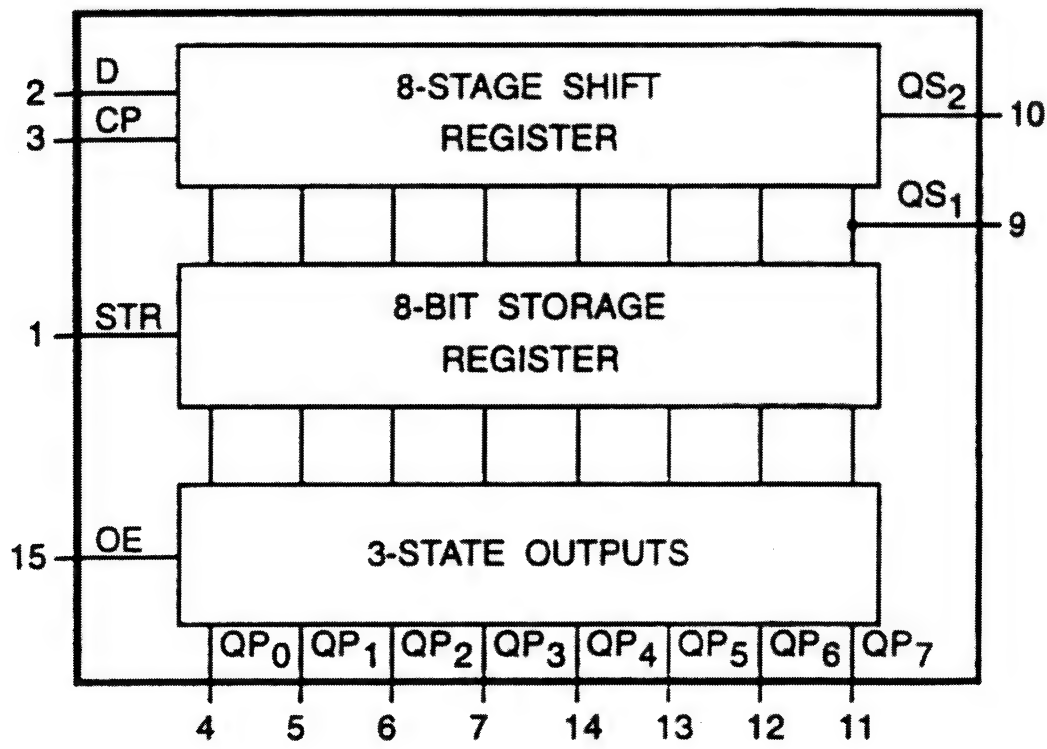
IC701: MC14052BCP



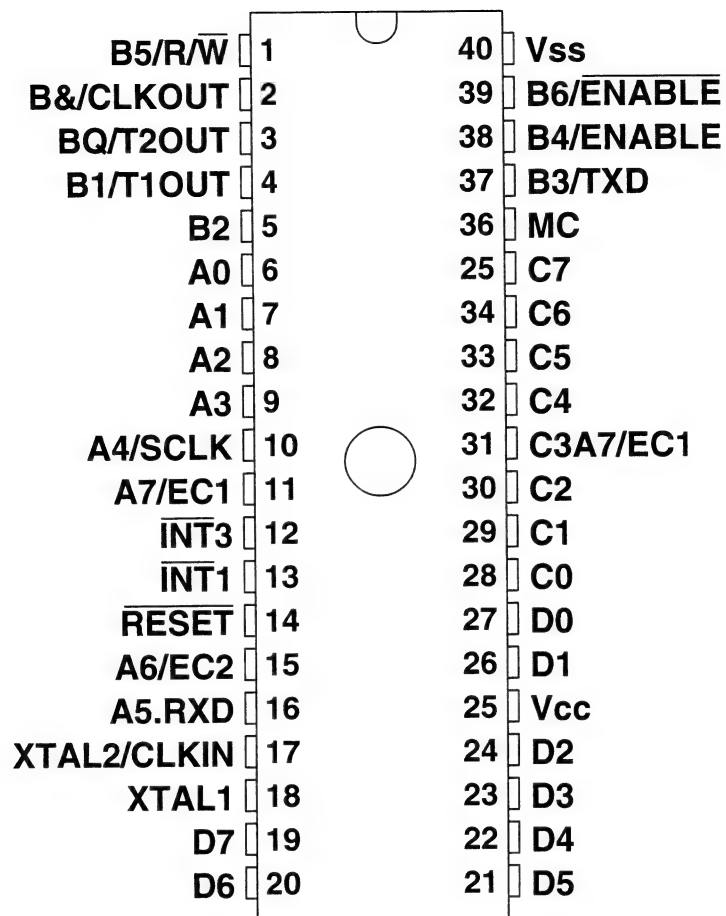
IC706: X24C01P



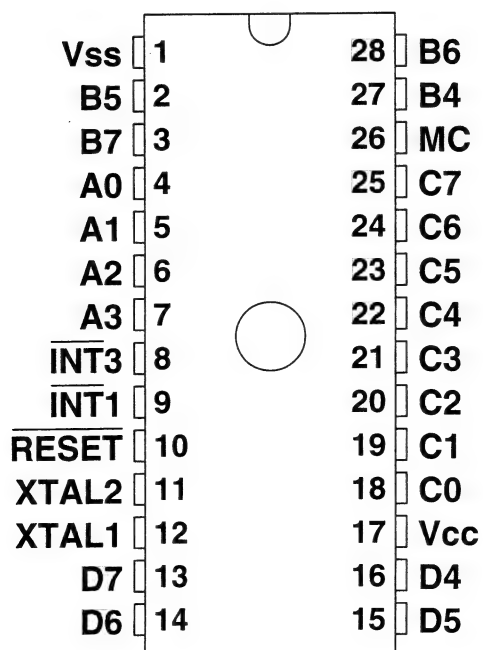
IC705: MC14094BCP



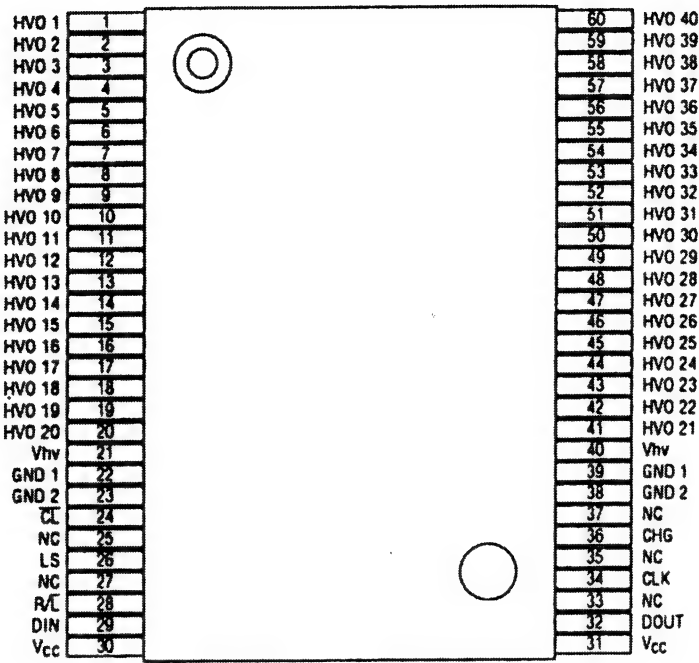
## IC703: TMS70CT82



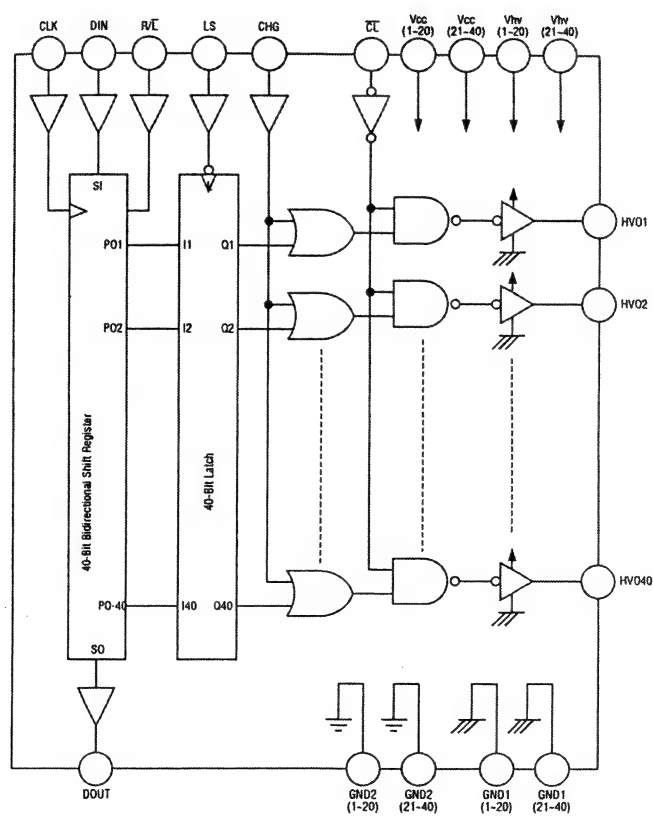
## IC711: TMS70CT20



IC712: TMS1162

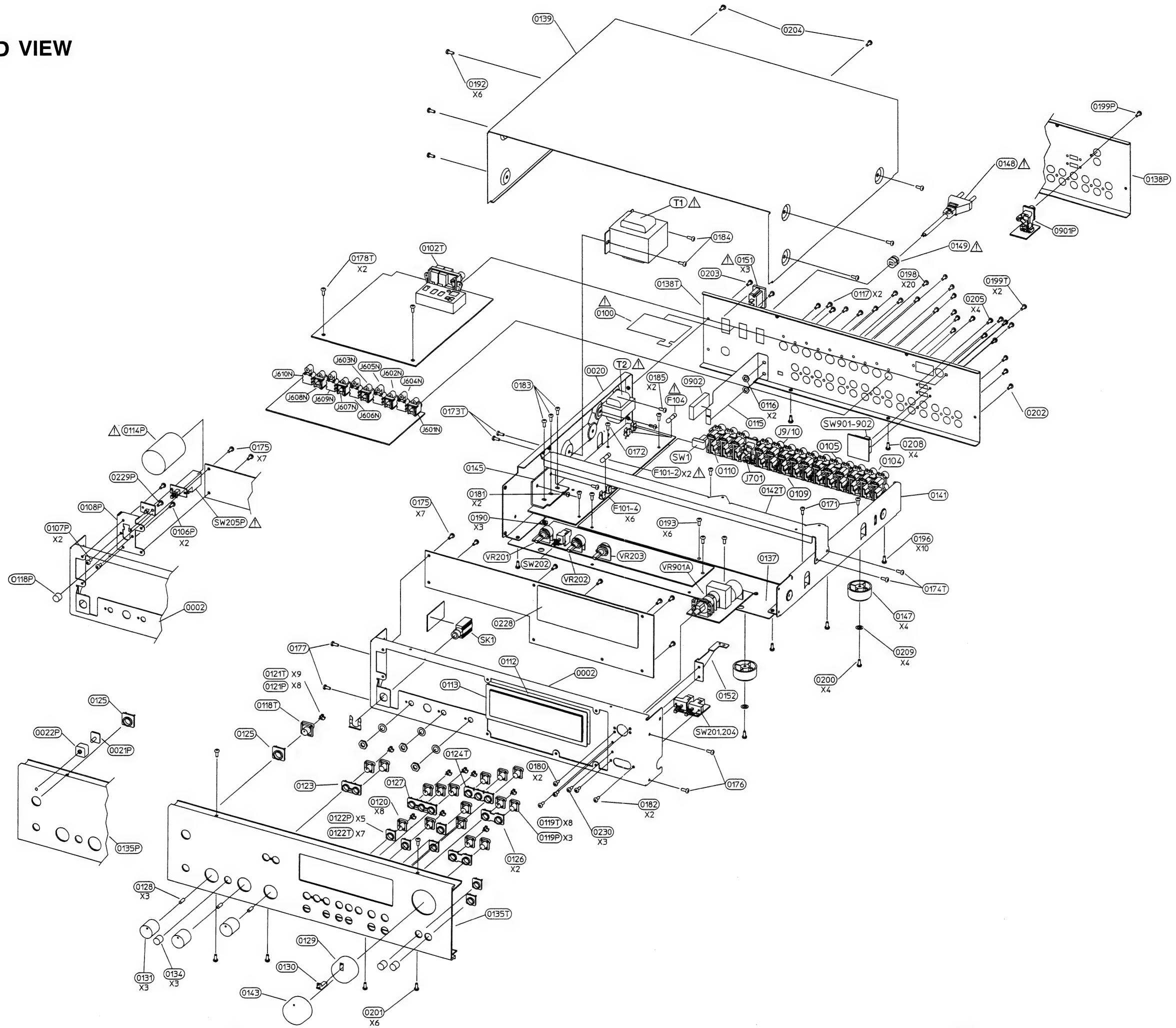


IC712: TMS1162 (BLOCK DIAGRAM)





## EXPLODED VIEW



## EXPLODED VIEW PARTS LIST

Item	Part No	Description	Qty
FH101-4	4131-9131-0	FUSE HOLDER 6.5MM PICTH RECT	6
0002	N14023390-2	SUBFACIA	1
0020	N14023430-1	LEFT SIDE PANEL	1
0021P	N37145706-0	LED LENS	1
0022P	4152-1701-0	LED BEZEL	1
0100*AH ▲	N41520571-0	AC OUTLET COVER PLATE AH VERSION	1
0102T*AH	N21070641-0	ANTENNA TERMINAL F-TYPE	1
0102T*B,C	N21070681-0	ANTENNA TERMINAL DIN-TYPE	1
0104-0105	N21038506-2	6P RCA JACK R/W NI	2
0106P	2904-3006-4000	MACHINE SCREW 3X6MM	2
0107P	2904-3006-4000	MACHINE SCREW 3X6MM	2
0108P	4132-2641-0	POWER SWITCH BRACKET	1
0109-0110	N21038506-2	6P RCA JACK R/W NI	2
0112	N37145206-0	FILTER 156X53X0.5MM	1
0113	N37143426-0	DISPLAY LENS	1
0114P ▲	1660-0620-0	SHRINKABLE TUBE	1
0115	1454-1751-0	SHIELD PLATE 80MM HIGH	1
0116	2836-3005-0	HEX NUT M3X0.5P	2
0117	2904-3006-3000	MACHINE SCREW 3X6MM (BLK)	2
0118P	N2437510B-0	DIA 9.5 GLOSS POWER BUTTON	1
0118T	N2437720B-0	SINGLE LENS POWER BUTTON	1
0119P	N24377301-0	SINGLE BUTTON (BLACK)	3
0119T	N24377301-0	SINGLE BUTTON (BLACK)	8
0120	N24377401-0	SINGLE LENS BUTTON	8
0121P	N37143306-0	BUTTON LENS (CLEAR)	8
0121T	N37143306-0	BUTTON LENS (CLEAR)	9
0122P	N41520131-0	SINGLE BEZEL	5
0122T	N41520131-0	SINGLE BEZEL	7
0123	N41520141-0	DUAL LINKED BEZEL	1
0124T	N41520151-0	TRIPLE BEZEL	1
0125	N41520161-0	POWER BEZEL	1
0126	N41520171-0	DUAL BEZEL	2
0127	N41520181-0	TRIPLE LINKED BEZEL	1
0128	N41520041-0	KNOB POINTER	3
0129	N24377601-0	35MM KNOB CORE	1
0130	N24377706-0	35MM KNOB LENS	1
0131	N24375701-1	KNOB 18.5MM BASS/TREBLE/BALANCE	3
0134	N24376001-0	LONG BUTTON 8.0MM (INPUT SELECT)	3
0135P	N14024021-0	FASCIA	1
0135T	N14620701-0	FASCIA	1
0137	N14023400-0	BASE	1
0138P*AH	N14023410-0	REAR PANEL AH VERSION	1
0138P*C	1402-4041-1	REAR PANEL C VERSION	1
0138T*AH	N14023411-1	REAR PANEL AH VERSION	1
0138T*B,C	1402-3481-1	REAR PANEL B,C VERSION	1

Item	Part No	Description	Qty
0139	N14023420-0	TOP COVER	1
0141	N14023440-0	RIGHT SIDE PANEL	1
0142T	N14023450-0	STRAP	1
0143	N14023460-0	35MM KNOB SKIN	1
0145	N54000891-0	HEATSINK	1
0147	N41519371-1	RUBBER FOOT	4
0148*AH ▲	N70093100-1	AC CORD AH VERSION	1
0148*C ▲	N70093110-0	AC CORD C VERSION	1
0148T*B ▲	N70095110-1	AC CORD B VERSION	1
0149 ▲	N41519461-0	STRAIN RELIEF BUSHING	3
0151*AH ▲	N21035802-0	AC OUTLET 125V 15A UL AH VERSION	1
0152	N41520641-0	VR BRACKET	1
0171	2954-3008-0000	TAPPING SCREW 3X8MM B-TITE YEL	2
0172	2954-3008-0000	TAPPING SCREW 3X8MM B-TITE YEL	1
0173T	2954-3008-0000	TAPPING SCREW 3X8MM B-TITE YEL	2
0174T	2954-3008-0000	TAPPING SCREW 3X8MM B-TITE YEL	2
0175	2904-3006-4000	MACHINE SCREW 3X6MM	7
0176	2954-3008-0000	TAPPING SCREW 3X8MM B-TITE YEL	2
0177	2954-3008-0000	TAPPING SCREW 3X8MM B-TITE YEL	2
0178T	2954-3008-0000	TAPPING SCREW 3X8MM B-TITE YEL	2
0180	2954-3006-0000	TAPPING SCREW 3X6MM B-TITE YEL	2
0181	2954-3006-0000	TAPPING SCREW 3X6MM B-TITE YEL	2
0182	2904-3008-4000	MACHINE SCREW 3X8MM	2
0183	2904-3012-4000	MACHINE SCREW 3X12MM	3
0184	2900-4006-3010	SCREW M4X0.5X6MM W/FLAT WASHER	2
0185	2900-3006-4000	MACHINE SCREW 3X6MM	2
0190	2836-3005-0	HEX NUT M3X0.5P	3
0192	2900-4006-3010	SCREW M4X0.5X6MM W/FLAT WASHER	6
0193	2900-3014-3000	MACHINE SCREW 3X14MM (BLK.ZN)	6
0196	2954-3006-3000	TAPPING SCREW 3X6MM B-TITE (BLK.ZN)	10
0198	2954-3008-3000	TAPPING SCREW 3X8MM B-TITE B	20
0199P	2954-3008-3000	TAPPING SCREW 3X8MM B-TITE B	1
0199T	2954-3008-3000	TAPPING SCREW 3X8MM B-TITE B	2
0200	2954-3008-3000	TAPPING SCREW 3X8MM B-TITE B	4
0201	2954-3008-3000	TAPPING SCREW 3X8MM B-TITE B	6
0202	2954-3008-3000	TAPPING SCREW 3X8MM B-TITE B	1
0203	2954-3006-3000	TAPPING SCREW 3X6MM B-TITE (BLK.ZN)	2
0204	2954-3008-3000	TAPPING SCREW 3X8MM B-TITE B	2
0205	2900-2604-3000	MACHINE SCREW 2.6X4MM (BLK.ZN)	4
0208	2954-3008-3000	TAPPING SCREW 3X8MM B-TITE B	4
0209	2842-3367-0	METAL WASHER ID=3.3 OD=6.7	4
0228	N24600990-0	DISPLAY PANEL	1
0229P	2954-3006-0000	TAPPING SCREW 3X6MM B-TITE (YEL.ZN)	1
0230	2904-3006-4000	MACHINE SCREW 3X6MM NICKEL	3
0901P	2113-0700-0	RCA JACK R/W NI-PLATED	1

ELECTRICAL PARTS LIST

Item	Part No	Description	Qty
0902	4152-0561-0	SHIELD PLATE CUSHION	1
F101-2*AH△	5120-0010-0	FUSE 250V 800MA TIME LAG UL/CSA	2
F104*AH △	N51005010-1A	FUSE 250V 500MA SLOW BLOW UL/CSA	1
F101-2T*B,C△	5120-0011-0	FUSE 250V 800MA TIME LAG LBC VDE/SEMKO	2
F101-2P*C△	5120-0011-0	FUSE 250V 800MA TIME LAG LBC VDE/SEMKO	2
F104T*B,C&P*C △	N51005010-1B	FUSE 250V 500MA SLOW BLOW LBC VDE/SEMKO	1
T1 △	N18062104-0	TRANSFORMER MAIN 614C	1
T2 △	N18062096-0	TRANSFORMER EI35 115/230VDC 160MA	1
J601N-J603N	21038201-0	1P RCA SOCKET,YELLOW	3
J604N-J606N	21038301-0	1P S-VHS SOCKET	3
J607N-J608N	21038201-0	1P RCA SOCKET,YELLOW	2
J609N-J610N	21038301-0	1P S-VHS SOCKET	2
J701	N21039102-0	2P RCA JACK ORG	1
J9/10	N21037604-2	4P RCA JACK R/W NI	1
SK1	N21038401-0	6MM PHONE JACK JY6312 W/CLIP	1
SW1	N52003261-0-01	SLIDE SWITCH 2P3T	1
SW201,SW204	N52003271-0-01	DUAL PUSH SWITCH DPDT (SPUN22)	1
SW202	N52003121-0-01	2P2T ALPS SPUN W/O FRAME	1
SW205P △	5200-3481-0	POWER SWITCH TV-3 3A/250V	1
SW901,SW902	N52003251-0-01	SLIDE SWITCH DPDT	2
VR201	N47503676-0	VR BASS 2X50KC W/WASHER & NUT	1
VR202	N47503646-0	VR TREBLE 2X10KC W/WASHER & NUT	1
VR203	N47503656-0	VR BALANCE 1X10KW W/WASHER & NUT	1
VR901A	N47503706-0	MOTOR DRIVE RM (20KBX4) RK16314MCL	1

NOTE : - THE COMPONENTS IDENTIFIED BY △ MARK ARE CRITICAL FOR RISK OF FIRE AND ELECTRICAL SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.


- <\*AH> : USA, CANADIAN MODEL ONLY.


<\*B> : UK MODEL ONLY.

<\*C> : EUROPEAN MODEL ONLY.

- ITEMS WITH THE EXTENSION "T" ARE FOR THE 917 ONLY,  
ITEMS WITH THE EXTENSION "P" ARE FOR THE 117 ONLY,  
ALL OTHER ITEMS ARE COMMON PARTS.

Reference No	Part Number	Description
<b>PUSH SWITCH BOARD</b> <b>PC BOARD</b> △	1720-300C-0103 MI-20300C-01-S MI-21460G-01-S	PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117)
<b>SWITCH</b> SW201	N52003271-0-01	DUAL PUSH SWITCH DPDT (SPUN22)
<b>SLIDE SWITCH BOARD</b> <b>PC BOARD</b> △	1720-300G-0103 MI-20300G-01-S MI-21460H-01-S	PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117)
<b>SWITCHES</b> SW901-SW902	N52003251-0-01	SLIDE SWITCH DPDT
<b>MOTOR POT ASSEMBLY</b> <b>PC BOARD</b> △	1720-300D-0103 MI-20300D-01-S MI-21460C-01-S	PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117)
<b>ICS</b> IC901A	N31303410-0	IC LB1642 MOTOR DRIVER
<b>CAPACITORS</b> C901A	157D-106M-5-II	CE 16V 10μF 20%
<b>VARIABLE RES.</b> VR901A	N47503706-0	MOTOR DRIVE RM (20KBX4) RK16314MCL
<b>HEADPHONE ASSEMBLY</b> <b>PC BOARD</b> △	1720-300E-0103 MI-20300E-01-S MI-21460D-01-S	PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117)
<b>PHONE JACK</b> SK1	N21038401-0	6MM PHONE JACK JY6312 W/CLIP
<b>PANEL ASSEMBLY</b> <b>PC BOARD</b> △	1720-320A-0001 MI-20320A-01-S MI-21550A-01-S	FRONT PANEL PCB - NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117)
<b>ICS</b> IC701T IC702T IC703 IC705 IC706 IC707-IC709	N31303840-0 N31303590-0 3130-4930-0 N31303600-0 N31303450-0 N31303600-0	MC14052BCP QUAD ANALOG SWITCH DUAL JFET OPAMP TL062 IC TMS77C82 OTP BLANK MC14094BCP 8-BIT SIPO SR 3S IC X24COIP XICOR EEPROM MC14094BCP 8-BIT SIPO SR 3S

Reference No	Part Number	Description
IC710 IC711 IC712	N89100033-0 N31303630-0 N31303640-0	IR RECEIVER HC-341F 70CT20 DISPLAY MPX MSC1162 ANODE/GRID DRIVER
<b>TRANSISTORS</b> Q701-Q702T	4860-0700-5	TR 2SC1815GR
<b>CAPACITORS</b> C701T C702T C703-C704 C707,C714T C721 C722-C723 C724 C725 C790T	153F-682K-5-KW 150F-104K-5-II 15CH-330J-5-IG 157D-106M-5-II 157E-225M-5-EI 15CH-330J-5-IG 157E-225M-5-EI 157F-106M-5-IU 150F-104K-5-II	CM 50V 6800pF 10% CC 50V 0.1uF 10% CAP-TEMP 0/60 33pF 5% CE 16V 10u 20% CE 25V 2.2uF 20% CAP-TEMP 0/60 33pF 5% CE 25V 2.2uF 20% CE 50V 10uF 20% CC 50V 0.1uF 10%
<b>DIODES</b> D701,D707 D714-D717P D714-D717T D728,D730 D740P D740T	4804-1480-C 3700-3513-Y 3700-4509-Y 4804-1480-C 3700-3513-Y 3700-4509-Y	DIODE 1N4148 LED 3MM YELLOW LED 2MM YELLOW DIODE 1N4148 LED 3MM YELLOW LED 2MM YELLOW
<b>RESISTORS</b> R702T R703T R706T-R707T R724T R725P R728P-R738P R791P R792P	4701-105J-C 4701-103J-C 4701-103J-C 4701-561J-C 4701-103J-C 4701-472J-C 4701-331J-C 4701-681J-C	RCF 1M OHM 1/8W 5% RCF 10K OHM 1/8W 5% RCF 10K OHM 1/8W 5% RCF 560 OHM 1/8W 5% RCF 10K OHM 1/8W 5% RCF 4.7K OHM 1/8W 5% RCF 330 OHM 1/8W 5% RCF 680 OHM1/8W 5%
<b>SWITCHES</b> S1-S2 S3T-S4T S5 S6 S7 S8T-S10T S11 S12 S13-S14 S15 S16-S17T	N52003231-0-01 N52003241-0-01 N52003231-0-01 N52003241-0-01 N52003201-0-01 N52003241-0-01 N52003231-0-01 N52003241-0-01 N52003201-0-01 N52003241-0-01 N52003201-0-01	TACT SWITCH ALPS SKHQFH AMBER LED TACT SWITCH ALPS SKHQAC TACT SWITCH ALPS SKHQFH AMBER LED TACT SWITCH ALPS SKHQAC TACT SWITCH ALPS SKWQFG GREEN LED TACT SWITCH ALPS SKHQAC TACT SWITCH ALPS SKHQFH AMBER LED TACT SWITCH ALPS SKHQAC TACT SWITCH ALPS SKWQFG GREEN LED TACT SWITCH ALPS SKHQAC TACT SWITCH ALPS SKWQFG GREEN LED
<b>RESONATOR</b> X701-X702	N27030120-0	CERAMIC RESONATOR CSA 4.91MG
<b>TONE CONTROL ASSEMBLY</b> <b>PC BOARD</b> 	1720-300B-0103 MI-20300B-01-S MI-21460A-01-S	PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117)
<b>ICS</b> IC204 IC207-IC208	N31303680-0 N31303680-0	IC NJM2043D DUAL OP AMP. IC NJM2043D DUAL OP AMP.
<b>TRANSISTORS</b> Q201-Q204	N485363BL-5	TR N-JFET 2SK363BL

Reference No	Part Number	Description
<b>DIODES</b> D201-D204	4804-1480-C	DIODE 1N4148
<b>CAPACITORS</b> C216-C218 C219-C222 C225-C226 C227-C228 C229-C230 C231-C232 C235-C236 C237-C241 C243-C244 C268-C269 C291-C292 C295-C296 C297-C298	157E-106M-5-IU 153I-224J-9-NL 157E-106M-5-IU 153F-823J-5-SY 153I-474J-9-NO 157D-476M-5-KW 157C-107M-5-IU 157F-105M-5-IU 157C-107M-5-IU 157E-106M-5-IU 157D-476M-5-KW 153F-183J-5-KP 153F-104J-5-SY	CE 25V 10uF 20% CM 63V 0.22uF 5% CE 25V 10uF 20% CM 50V 0.082uF 5% CM 63V 0.47uF 5% CE 16V 47uF 20% CE 10V 100uF 20% CE 50V 1uF 20% CE 10V 100uF 20% CE 25V 10uF 20% CE 16V 47uF 20% CM 50V 0.018uF 5% CM 50V 0.1uF 5%
<b>VARIABLE RES.</b> VR201 VR202 VR203	N47503676-0 N47503646-0 N47503656-0	VR BASS 2X50KC W/WASHER & NUT VR TREBLE 2X10KC W/WASHER & NUT VR BALANCE 1X10KW W/WASHER & NUT
<b>SWITCHES</b> SW202	N52003121-0-01	2P2T ALPS SPUN W/O FRAME
<b>PROCESSOR ASSEMBLY</b> <b>PC BOARD</b> 	1720-310A-0102 MI-20310A-01-S	PCB NO COMPONENTS PCB ASSEMBLY(917,117)
<b>ICS</b> IC109 IC201 IC203 IC211-IC212 IC220 IC221 IC301-IC302 IC303 IC304 IC305-IC307 IC308-IC309 IC310 IC311 IC501 IC502 IC505 IC506 IC507-IC508	3130-2020-1 N31303710-0 N31303680-0 3130-0890-0 N31303730-0 3130-0890-0 N31303660-0 N31303670-0 N31303680-0 N31303660-0 N31303690-0 N31303660-0 N31304080-0 N31303700-0 N31303710-0 N31303660-0 3130-4870-0 3130-0890-0	IC UPD7805H 1A 5V IC TC9163N HV ANALOG SWITCH IC NJM2043D DUAL OP AMP. IC NJM4558D DUAL OP AMP IC TC9164N HV ANALOG SW IC NJM4558D DUAL OP AMP. IC NJM2068D DUAL LN-OP AMP. IC SSM2404 QUAD ANALOG SWITCH IC NJM2043D DUAL OP AMP. IC NJM2068D DUAL LN-OP AMP. IC TC9176 VOLUME CONTRO IC NJM2068D DUAL LN-OP IC TL072 DUAL FET OP AMP. IC NJM2177 DOLBY PROLOGIC IC TC9163N HV ANALOG SWITCH IC NJM2068D DUAL LN-OP AMP. IC NJU9702 OR NJU9701 FILTER/DELAY IC NJM4558D DUAL OP AMP.
<b>TRANSISTORS</b> Q301-Q302 Q305-Q306 Q307-Q315 Q316-Q317 Q318-Q320 Q703-Q704 Q705 Q901	N485363BL-5 N48600660-5 4860-0700-5 N48600660-5 4860-0700-5 N48600660-5 N4851815Y-5 N48600660-5	TR N-JFET 2SK363BL TR 2SA1015GR TR 2SC1815GR TR 2SA1015GR TR 2SC1815GR TR 2SA1015GR TR 2SC1815-Y HFE 120-240 TR 2SA1015GR

Reference No	Part Number	Description
<b>DIODES</b>		
D301-D302	4804-1480-C	DIODE 1N4148
D303-D306	4837-7V51-2	ZENER 1/2W 7.5V
D307-D308	4804-1480-C	DIODE 1N4148
D309	4804-1480-2	DIODE 1N4148
D320-D321	4804-1480-C	DIODE 1N4148
D501-D502	4804-1480-C	DIODE 1N4148
D702-D703	4804-1480-C	DIODE 1N4148
<b>COILS</b>		
L001	1801-1R5M-M	CHOKER COIL 1.5UH 20%
<b>CAPACITORS</b>		
C215-C217	157E-106M-5-IU	CE 25V 10μF 20%
C253-C254	157F-105M-5-IU	CE 50V 1μF 20%
C273-C274	157F-225M-5-IU	CE 50V 2.2μF 20%
C275-C276	157D-476M-5-KW	CE 16V 47μF 20%
C277-C287	157E-106M-5-IU	CE 25V 10μF 20%
C301-C308	157D-107M-5-KW	CE 16V 100μF 20%
C309-C310	157E-106M-5-IU	CE 25V 10μF 20%
C311-C312	157E-475M-5-IU	CE 25V 4.7μF 20%
C322-C323	157E-106M-5-IU	CE 25V 10μF 20%
C324	157F-105M-5-IU	CE 50V 1μF 20%
C325	157E-106M-5-IU	CE 25V 10μF 20%
C326	157F-105M-5-IU	CE 50V 1μF 20%
C327	157E-106M-5-IU	CE 25V 10μF 20%
C332	157E-106M-5-IU	CE 25V 10μF 20%
C333	157D-106M-5-IU	CE 16V 10μF 20%
C334-C335	157E-106M-5-IU	CE 25V 10μF 20%
C336	153F-223K-5-LQ	CM 50V 0.022μF 10%
C337	153F-103K-5-KM	CM 50V 0.01μF 10%
C338	153F-223K-5-LQ	CM 50V 0.022μF 10%
C339	153F-103K-5-KM	CM 50V 0.01μF 10%
C347	157D-106M-5-IU	CE 16V 10μF 20%
C348	15CH-180K-5-GG	CAP-TEMP 0/60 18PF 10%
C351-C352	157E-106M-5-IU	CE 25V 10μF 20%
C353-C354	157D-476M-5-IU	CE 16V 47μF 20%
C355-C361	157E-106M-5-IU	CE 25V 10μF 20%
C362-C365	157D-476M-5-IU	CE 16V 47μF 20%
C365-C366	157E-106M-5-IU	CE 25V 10μF 20%
C367-C368	153F-104K-5-PT	CM 50V 0.1μF 10%
C380-C383	157F-105M-5-IU	CE 50V 1μF 20%
C501	157D-475M-5-IU	CE 16V 4.7μF 20%
C502-C504	153F-224K-5-MIB	CM 50V 0.22μF 10%
C505	153F-684K-5-KW	CM 50V 0.68μF 10%
C506	153F-472K-5-KW	CM 50V 4700PF 10%
C507	153F-562K-5-KW	CM 50V 5600PF 10%
C508	158F-471J-5-KW	CP 50V 470PF 5%
C509	157D-227M-5-OW	CE 16V 220μF 20%
C510	153F-473K-4-RY	CM 50V 0.047μF 10%
C511	153F-562K-5-KW	CM 50V 5600PF 10%
C512-C513	157E-106M-5-IU	CE 25V 10μF 20%
C514	153F-224K-5-MIB	CM 50V 0.22μF 10%
C515-C519	157E-106M-5-IU	CE 25V 10μF 20%
C520	157D-226M-5-IU	CE 16V 22μF 20%
C521	153F-472K-5-KW	CM 50V 4700PF 10%
C522	157D-475M-5-IU	CE 16V 4.7μF 5%
C523-C524	153F-224K-5-MIB	CM 50V 0.22μF 10%
C525-C527	153F-104K-5-PT	CM 50V 0.1μF 10%
C528-C529	153F-223K-5-LQ	CM 50V 0.022μF 10%
C530	158F-681J-5-KW	CP 50V 680PF 5%
C531	153F-473K-4-RY	CM 50V 0.047μF 10%
C532-C533	153F-104K-5-PT	CM 50V 0.1μF 10%



Reference No	Part Number	Description
C535-C536	157E-106M-5-IU	CE 25V 10μF 20%
C537-C538	153F-104K-5-PT	CM 50V 0.1μF 10%
C539	153F-473K-4-RY	CM 50V 0.047μF 10%
C540	158F-681J-5-KW	CP 50V 680PF 5%
C541-C544	157E-106M-5-IU	CE 25V 10μF 20%
C548-C550	153F-563K-5-OS	CM 50V 0.056μF 10%
C552-C554	153F-563K-5-OS	CM 50V 0.056μF 10%
C556	153F-563K-5-OS	CM 50V 0.056μF 10%
C557	153F-222K-5-KW	CM 50V 2200PF 10%
C558	153F-563K-5-OS	CM 50V 0.056μF 10%
C559	153F-222K-5-KW	CM 50V 2200PF 10%
C569	157F-105M-5-IU	CE 50V 1μF 20%
C570	153F-562K-5-KW	CM 50V 5600PF 10%
C571	158F-561J-5-KW	CP 50V 560PF 5%
C572-C573	153F-473K-4-RY	CM 50V 0.047μF 5%
C574	157D-107M-5-KW	CE 16V 100μF 20%
C576	153F-104K-5-PT	CM 50V 0.1μF 10%
C577	157D-476M-5-IU	CE 16V 47μF 20%
C580	158F-561J-5-KW	CP 50V 560PF 5%
C581	153F-104K-5-PT	CM 50V 0.1μF 10%
C582	153F-562K-5-KW	CM 50V 5600PF 10%
C583	157F-105M-5-IU	CM 50V 1μF 20%
C584	153F-103K-5-KM	CM 50V 0.01μF 10%
C585	157E-106M-5-IU	CE 25V 10μF 20%
C586-C599	157F-105M-5-IU	CE 50V 1μF 20%
C901-C920	157E-106M-5-IU	CE 25V 10μF 20%
<b><u>RESISTORS</u></b>		
R590	4715-1003-2-K	RMF 100K OHM 1/4W 1%
<b><u>VARIABLE RES.</u></b>		
VR301-VR302	N47561030-3-11	SEMI-FIXED 10K OHM
<b><u>SWITCHES</u></b>		
SW1	N52003261-0-01	SLIDE SWITCH 2P3T
<b><u>CRYSTAL</u></b>		
XL501	N23000920-0	CRYSTAL 2MHZ HC-49/U
<b><u>RCA JACK</u></b>		
0104-0105	N21038506-2	6P RCA JACK R/W NI
0109-0110	N21038506-2	6P RCA JACK R/W NI
J9/10	N21037604-2	4P RCA JACK R/W NI
J701	N21039102-0	2P RCA JACK ORG
<b><u>PSU ASSEMBLY</u></b>		
<b><u>PC BOARD</u></b>		
	1720-300B-0102	PCB NO COMPONENTS
	MI-20310B-01-S	PCB ASSEMBLY (917AH)
	MI-20310B-02-S	PCB ASSEMBLY (917B,C)
	MI-20310B-03-S	PCB ASSEMBLY (117AH)
	MI-20310B-04-S	PCB ASSEMBLY (117C)
<b><u>ICS</u></b>		
IC602	3130-2020-1	IC UPD7805H 1A 5V
IC603	N31302520-1	IC 7812 12V REGULATOR
IC604	N31303800-0	IC UPC79M12HF REGULATOR
<b><u>TRANSISTORS</u></b>		
Q107	N485240GR-5	TR 2SC2240GR
Q108	N485D613D-5	TR 2SD613D
Q605	N4851815Y-5	TR 2SC1815-Y HFE 120-240

Reference No		Part Number	Description
<b><u>DIODES</u></b>			
D101		N48400630-0	BRIDGE DIODE 2W02G
D102		4804-0010-1	DIODE 1N4001
D103-D106		4804-0020-1	DIODE 1N4002
D107		N48400650-0	ZENER 1/2W 33V 5%
D108		N48400640-0	ZENER 1/2W 28V HZ273
D110		N48400630-0	BRIDGE DIODE 2W02G
<b><u>CAPACITORS</u></b>			
C101	△	N89100049-0	CAP 400V 4700P DE7150F472MVA1KC
C102-C103		8910-0007-0	CAP 35V 4700U 35V 16X35
C104T		635N-0001-0	JUMPER #23 TAPE & WHEEL
C104P	△	N89100049-0	CAP 400V 4700P DE7150F472MVA1KC
C106-C107		157Q-106M-5-IU	CE 35V 10μF 20%
C108-C109		157E-106M-5-IU	CE 25V 10μF 20%
C110-C111		157D-106M-5-II	CE 16V 10μF 20%
C114-C117		157F-227M-5-S5	CE 50V 220μF 20%
C118		157I-476M-5-OV	CE 63V 47μF 20%
C119		157I-106M-5-IU	CE 63V 10μF 20%
C120		157F-227M-5-S5	CE 50V 220μF 20%
C122		157I-106M-5-IU	CE 63V 10μF 20%
C124		157D-228M-5-W9	CE 16V 2200μF 20%
<b><u>RELAY</u></b>			
RLY101	△	N45000110-0	RELAY 12V-DC
<b><u>SWITCH</u></b>			
SW205P	△	5200-3481-0	POWER SWITCH TV-3 3A/250V
<b><u>FUSES</u></b>			
F101-F102*AH	△	5120-0010-0	FUSE 250V 800MA TIME LAG UL/CSA
F104*AH	△	N51005010-1A	FUSE 250V 500MA SLOW BLOW UL/CSA
F101-F102T*B,C & P*C	△	5120-0011-0	FUSE 250V 800MA TIME LAG LBC SEMKO
F104T*B,C & P*C	△	N51005010-1B	FUSE 250V 500MA SLOW BLOW LBC VDE/SEMKO
FH101-F104		4131-9131-0	FUSE HOLDER 6.5MM PITCH RECT
<b><u>TRANSFORMER</u></b>			
T1	△	N18062104-0	TRANSFORMER MAIN 614C
T2	△	N18062096-0	TRANSFORMER EI35 115/230VDC 160MA
<b><u>AC OUTLET TERMINAL</u></b>			
O100*AH	△	N41520571-0	AC OUTLET COVER PLATE
O151*AH	△	N21035802-0	AC OUTLET 125V 15A UL
OUTLET*AH (917 ONLY)	△	N4707275J-2	RCF 2.7M Ohm 1/2W 5% AT (SAFETY DISCHARGE)
<b><u>TUNER ASSEMBLY (917 ONLY)</u></b>			
<b><u>PC BOARD</u></b>			
	△	1720-300A-0103	PCB NO COMPONENTS
		MI-20300A-01-S	PCB ASSEMBLY (917AH)
		MI-20300A-02-S	PCB ASSEMBLY (917B,C)
<b><u>ICS</u></b>			
IC401		3130-0890-0	IC NJM4558D DUAL OP AMP.
IC701		N31303430-0	IC LM7000 DTS
IC702*AH		N89100034-0	TUNER MODULE FE407-A16
IC702*C		1300-0606-0	TUNER MODULE FE407-G58

<b>Reference No</b>	<b>Part Number</b>	<b>Description</b>
IC703	N31303390-0	IC LA1266 FM/AM TUNER
IC704	N31303400-0	IC LA3401 PLL MPX
<b><u>TRANSISTORS</u></b>		
Q005-Q009	485C-930E-5	TR 2SC930E HFE 100-200
Q701-Q703	4860-0700-5	TR 2SC1815GR
Q704	N48600660-5	TR 2SA1015GR
Q710-Q713	4860-0700-5	TR 2SC1815GR
Q714	N48600660-5	TR 2SA1015GR
<b><u>DIODES</u></b>		
D401	4804-1480-C	DIODE 1N4148
D701-D702	N4801N60P-1	GERMANIUM DIODE 1N60P
D703-D704	484C-321D-5	SVC321-D AM CAR. DIODE
<b><u>COILS</u></b>		
L701	1801-2R2M-M	COIL 2.2 $\mu$ H 20%
L702*C	2701-0609-4	BAND PASS FILTER 64-108MHZ
L703	1801-2R2M-M	COIL 2.2 $\mu$ H 20%
L704	N56002276-S	AM COIL 5564102600
L705	N56002286-S	AM OSC COIL 5564312800
L706	N56002256-S	FM COIL PRIMARY
L707	N56002266-S	FM COIL SECONDARY
L708	N56002246-S	AM IF COIL
L710	N1801680M-M	COIL 68 $\mu$ H 20%
<b><u>CAPACITORS</u></b>		
C701	1551-0210-0	TRIMMER 5.2-30PF
C703	157B-107M-5-KM	CE 6.3V 100 $\mu$ F 20%
C704	157F-107M-5-OW	CE 50V 100 $\mu$ F 20%
C705	157F-335M-5-IU	CE 50V 3.3 $\mu$ F 20%
C707	157F-474M-5-IU	CE 50V 0.47 $\mu$ F 20%
C709	157Q-474M-5-IU	CE 35V 0.47 $\mu$ F 20%
C712	157D-106M-5-IU	CE 16V 10 $\mu$ F 20%
C721	1551-0210-0	TRIMMER 5.2-30PF
C725	157D-106M-5-IU	CE 16V 10 $\mu$ F 20%
C726	157F-475M-5-IU	CE 50V 4.7 $\mu$ F 20%
C733	157F-335M-5-IU	CE 50V 3.3 $\mu$ F 20%
C738	157F-335M-5-IU	CE 50V 3.3 $\mu$ F 20%
C739	158F-101J-5-KW	CP 50V 100PF 5%
C741	157D-107M-5-KW	CE 16V 100 $\mu$ F 20%
C742	157F-104M-5-IU	CE 50V 0.1 $\mu$ F 20%
C743	157D-106M-5-IU	CE 16V 10 $\mu$ F 20%
C744	158F-391J-5-KW	CP 50V 390PF 5%
C745	157D-476M-5-IU	CE 16V 47 $\mu$ F 20%
C746	157D-107M-5-KW	CE 16V 100 $\mu$ F 20%
C747	157F-105M-5-IU	CE 50V 1 $\mu$ F 20%
C748	157F-224M-5-IU	CE 50V 0.22 $\mu$ F 20%
C749-C750	157F-105M-5-IU	CE 50V 1 $\mu$ F 20%
C751	157D-106M-5-IU	CE 16V 10 $\mu$ F 20%
C752-C753*AH	158F-911J-5-KW	CP 50V 910PF 5%
C752-C753*C	158F-431J-5-KW	CP 50V 430PF 5%
C754-C755	153F-152J-5-KW	CM 50V 1500PF 5%
C756-C757	157D-106M-5-IU	CE 16V 10 $\mu$ F 20%
<b><u>VARIABLE RES.</u></b>		
R736	N47564730-3-11	SEMI-FIXED 47K OHM
R753	N47564730-3-11	SEMI-FIXED 47K OHM
<b><u>FILTERS</u></b>		
FL01-FL03*AH	N27010546-1-0	CERAMIC FILTER 10.7MHZ ML-A
FL01-FL03*C	N27010556-1-0	CERAMIC FILTER 10.7MHZ MZ2-A
FL703	N56002296-S	FTZ COIL



<b><u>Reference No</u></b>	<b><u>Part Number</u></b>	<b><u>Description</u></b>
FL704-FL705 FL706	N56002236-S 2701-0066-0	FILTER COIL 19KHZ CERAMIC FILTER 450 KHZ
<b><u>RESONATOR</u></b> X102	2703-0020-0	CERAMIC RESONATOR CSB456F11
<b><u>CRYSTAL</u></b> X701	N23000440-0	CRYSTAL 7.2MHZ 20PPM
<b><u>ANTENNA TERMINAL</u></b> 0102*AH 0102*B,C	N21070641-0 N21070681-0	ANTENNA TERMINAL F-TYPE ANTENNA TERMINAL DIN-TYPE
<b><u>TUNER I/P ASSEMBLY (117 ONLY)</u></b> <b><u>PC BOARD</u></b>	MI-21460F-01-S	PCB ASSEMBLY
<b><u>RCA JACK</u></b> 0901P	2113-0700-0	RCA JACK R/W NI-PLATED
<b><u>LED ASSEMBLY (117 ONLY)</u></b> <b><u>PC BOARD</u></b>	MI-21460E-01-S	PCB ASSEMBLY
<b><u>LED</u></b> LED1	N37003517-RG	LED RED/GREEN L-469 HGW
<b><u>VIDEO ASSEMBLY</u></b> <b><u>PC BOARD</u></b> ⚠	1720-300F-0103 MI-20300F-01-S MI-21460B-01-S	PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117)
<b><u>ICS</u></b> IC601 IC602 IC603 IC604 IC605	N31303740-0 N31304130-0 N31303760-0 N31303740-0 N31304050-0	IC NJM2246 3IP VIDEO SWITCH IC PCA8515P/009 OSD IC NJM2217 VIDEO SUPERIMPOSER IC NJM2246 3IP VIDEO SWITCH IC NJM2234D 3I/P VIDEO SWITCH
<b><u>TRANSISTORS</u></b> Q601-Q604	485C-930E-5	TR 2SC930E
<b><u>DIODES</u></b> D601-D602	4804-1480-C	DIODE 1N4148
<b><u>CAPACITORS</u></b> C600 C601-C606 C607 C609-C611 C618 C621-C622 C624 C625 C626 C628 C629 C631 C632	153F-103J-5-KW 157E-106M-5-IU 157F-105M-5-IU 157E-106M-5-IU 157E-106M-5-IU 157E-106M-5-IU 157C-108M-5-S5 153F-222K-5-KW 157C-108M-5-S5 157D-107M-5-KW 157E-106M-5-IU 157E-106M-5-IU 157C-108M-5-S5	CM 50V 0.01μF 5% CE 25V 10μF 20% CE 50V 1μF 20% CE 25V 10μF 20% CE 25V 10μF 20% CE 25V 10μF 20% CE 10V 1000μF 20% CM 50V 2200PF 10% CE 10V 1000μF 20% CE 16V 100μF 20% CE 25V 10μF 20% CE 25V 10μF 20% CE 10V 1000μF 20%

<b><u>Reference No</u></b>	<b><u>Part Number</u></b>	<b><u>Description</u></b>
C634-C635 C636 C637	157E-106M-5-IU 157C-108M-5-S5 157F-105M-5-IU	CE 25V 10µF 20% CE 10V 1000µF 20% CE 50V 1µF 20%
<b><u>VARIABLE RES.</u></b> R619	N47564730-3-11	SEMI-FIXED 47K OHM
<b><u>CRYSTAL</u></b> XL601	N23000930-0	CRYSTAL 3.58MHZ HC-49/U
<b><u>SOCKETS</u></b> J601N J602N J603N J604N J605N J606N J607N J608N J609N J610N	21038201-0 21038201-0 21038201-0 21038301-0 21038301-0 21038301-0 21038301-0 21038201-0 21038201-0 21038301-0 21038301-0	1P RCA SOCKET,YELLOW 1P RCA SOCKET,YELLOW 1P RCA SOCKET,YELLOW 1P S-VHS SOCKET 1P S-VHS SOCKET 1P S-VHS SOCKET 1P S-VHS SOCKET 1P RCA SOCKET,YELLOW 1P RCA SOCKET,YELLOW 1P S-VHS SOCKET 1P S-VHS SOCKET

**NOTE : - THE COMPONENTS IDENTIFIED BY  $\triangle$  MARK ARE CRITICAL FOR RISK OF FIRE AND ELECTRICAL SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.**

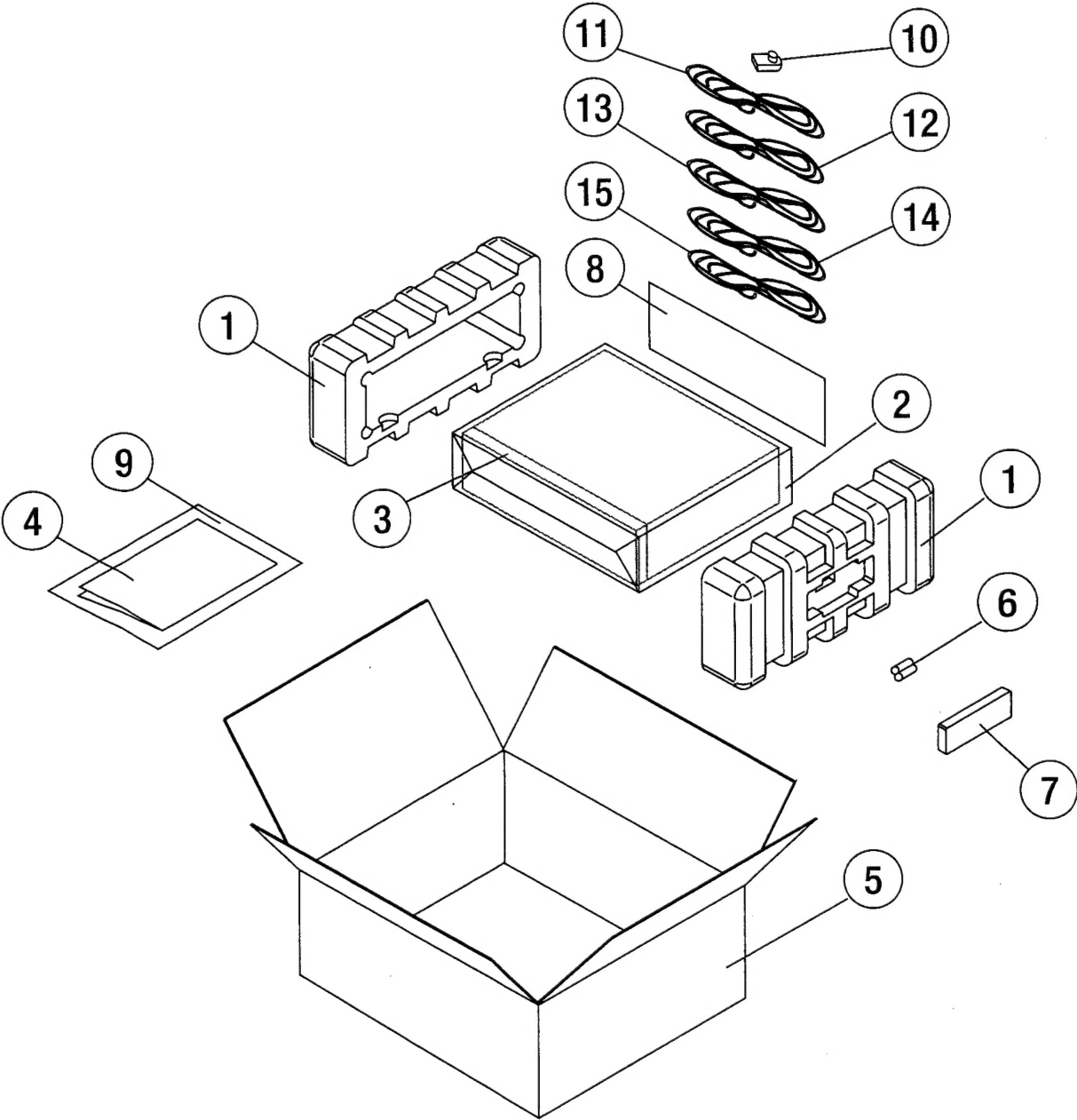
**- <\*AH> : USA, CANADIAN MODEL ONLY.**

**<\*B> : UK MODEL ONLY.**

**<\*C> : EUROPEAN MODEL ONLY.**

**- ITEMS WITH THE EXTENSION "T" ARE FOR THE 917 ONLY,  
ITEMS WITH THE EXTENSION "P" ARE FOR THE 117 ONLY,  
ALL OTHER ITEMS ARE COMMON PARTS.**

117/917 PACKING DIAGRAM



## 117/917 PACKING LIST

<u>Item</u>	<u>Part No</u>	<u>Description</u>	<u>Qty</u>
1	1490-1873-0	POLYFOAM END CAP	2
2	N14971072-3	POLYBAG	1
3	N14971252-0	EPE COVER	1
4P	4301-3611-1	INSTRUCTION MANUAL	1
4T	4301-3523-1	INSTRUCTION MANUAL	1
5	N14763800-0	CARTON BOX	1
6	4060-0630-0	BATTERIES	2
7	N89001100-0	REMOTE CONTROL	1
8	1497-1320-0	POLYBAG	1
9	N14971062-0	MANUAL POLYBAG	1
10T*AH	N21036101-0	RF CONNECTOR PLUG F-Type	1
10T*C	N21036201-0	RF CONNECTOR PLUG DIN-Type	1
11T	N21070661-1	"T" 300OHM ANTENNA	1
12T	N70093220-0	200CM WHITE AWG22	1
13	N21039001-0	VIDEO YEL RCA PLUGS	2
14	N21038901-0	MONO BLK RCA PLUGS	1
15	N21038801-0	STEREO R/W RCA PLUGS	2

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